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AIRMAN'S INFORMATION MANUAL

FLIGHT DATA AND SPECIAL OPERATIONS

SECTION III



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FEDERAL AVIATION AGENCY

INTRODUCTION

Section III—FLIGHT DATA AND SPECIAL OPERATIONS

Section III is published every 28 days and contains operational flight data most subject to continuous change that are not appropriate for inclusion within other sections of the Manual. Because it contains such critical flight data, this section should be kept close at hand in the event of a divergence in en route flight.

The information in Section III is presented in various tabulations or grouping arrangements appropriate to the specific items. Typical examples are: Preferred Routes, VOR Receiver Check Points, Parachute Jumping Areas, and Substitute Route Structures.

As a means of updating the Sectional Charts produced by the Coast and Geodetic Survey, Department of Commerce, a Sectional Chart Bulletin is included in Section III. This bulletin provides a cumulative tabulation of the major changes in aeronautical information that have occurred since the last publication date (normally every 6 months) of each sectional chart. Only those changes to controlled airspace and special use airspace, airports, and radio navigation facilities that present a hazardous condition or impose a restriction on the pilot are listed, thereby continually providing the VFR pilot with the essential data for keeping his sectional charts current until they are re-issued.

At the end of Section III are grouped detailed tabulations and charts of special operations and areas such as Oil Burner Routes, and military low altitude refueling tracks. This arrangement provides a consolidated presentation of areas and special operations that are not designated through rule-making procedures.

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GLOSSARY OF AERONAUTICAL TERMS

- **ADVISORY SERVICE**—Advice and information provided by a facility to assist pilots in the safe conduct of flight and aircraft movement.
- **AIR DEFENSE IDENTIFICATION ZONE (ADIZ)**—The area of airspace over land or water within which the ready identification, the location, and the control of aircraft are required in the interest of national security. For operating details see ADIZ procedures.
- **AIRPORT ADVISORY AREA**—The area within five statute miles of an uncontrolled airport on which is located a Flight Service Station as depicted on the appropriate Sectional Aeronautical Chart.
- **AIRPORT ADVISORY SERVICE**—A service provided by a Flight Service Station to enhance the safety of terminal operations of airports where a station is operating but where there is no control tower.
- **AIRPORT SURFACE DETECTION EQUIPMENT (ASDE)**—Radar equipment specifically designed to detect all principal features on the surface of an airport, including vehicular traffic, and to present the entire picture on a radar indicator console in the control tower. ASDE has a maximum range of four miles, though its 18 inch diameter scope usually displays an area of only one mile radius about the control tower.
- **AIRPORT SURVEILLANCE RADAR (ASR)**—Radar providing position of aircraft by azimuth and range data without elevation data. It is designed for a range of 50 miles.
- **AIRPORT TRAFFIC AREA**—Unless otherwise specifically designated (FAR Part 89), that airspace with a horizontal radius of five statute miles from the geographical center of any airport at which a control tower is operating, extending from the surface up to but not including, 2,000 feet above the surface.
- **AIR ROUTE SURVEILLANCE RADAR (ARSR)**—Long range radar which increases the capability of ATC for handling heavy en route traffic. An ARSR site is usually located at some distance from the ARTCC it serves.
- **AIR ROUTE TRAFFIC CONTROL CENTER (CENTER)**—A facility established to provide air traffic control service to aircraft operating on an IFR flight plan within controlled airspace and principally during the en route phase of flight.
- **AIR TRAFFIC**—Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.
- **AIR TRAFFIC CLEARANCE (CLEARANCE)**—An authorization by air traffic control for the purpose of preventing collision between known aircraft, for an aircraft to proceed under specified traffic conditions within controlled airspace.
- **AIR TRAFFIC CONTROL SERVICE (CONTROL)**—A service provided for the purpose of promoting the safe, orderly, and expeditious flow of air traffic, including airport, approach, and enroute air traffic control service.
- **ALTITUDE RESERVATION (ALTRV)**—Airspace utilization under prescribed conditions, normally employed for the mass movement of aircraft or other special user requirements which cannot otherwise be accomplished. ALTRV's are approved by the appropriate FAA facility.
- **APPROACH CONTROL SERVICE**—Air traffic control service, provided by a terminal area traffic control facility, for arriving and departing IFR aircraft and, on occasion, VFR aircraft.
- **APPROACH FIX**—The fix from or over which final approach (IFR) to an airport is executed.
- **APPROACH SEQUENCE**—The order in which aircraft are positioned while awaiting approach clearance or while on approach.
- **AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS)**—The continuous broadcast of recorded noncontrol information in selected high activity terminal areas. Its purpose is to improve controller effectiveness and to relieve frequency congestion by automating the repetitive transmission of essential but routine information.
- **CARDINAL ALTITUDES OR FLIGHT LEVELS**—"Odd" or "even" thousand-foot altitudes or flight levels. Examples: 5000, 6000, 7000, FL 250, FL 260, FL 270.
- **CEILING**—The height above the earth's surface of the lowest layer of clouds or obstruction phenomena that is reported as "broken," "overcast," or "obscuration" and not classified as "thin" or "partial."
- **CENTRAL ALTITUDE RESERVATION FACILITY (CARF)**—An Air Traffic Service facility established to conduct the volume of coordination, planning and approval of special user requirements under the altitude reservation concept.
- **CLEARANCE LIMIT**—The fix to which an aircraft is issued an air traffic clearance.
- **CODES**—The numbers assigned to the multiple pulse reply signals transmitted by ATCRBS and SIF transponders.
- **CONSOLAN**—A low frequency, long-distance navaid used principally for transoceanic navigation.
- **CONTACT APPROACH**—An approach wherein an aircraft on an IFR flight plan, operating clear of clouds with at least one mile flight visibility and having received an air traffic control authorization, may deviate from the prescribed instrument approach procedure and proceed to the airport of destination by visual reference to the surface.
- **CONTERMINOUS U.S.**—Forty-eight states and the District of Columbia.

CONTINENTAL U.S.—Forty-nine states. The original 48 states and Alaska.

• **CONTROLLED AIRSPACE**—Airspace designated as continental control area, control area, control zone, or transition area, within which some or all aircraft may be subject to air traffic control.

Continental control area—Airspace at and above 14,500 feet MSL of the 48 contiguous states, the District of Columbia, and Alaska south of Lat. 68°00'00"N, excluding the Alaska peninsula west of Long. 160°00'00"W; airspace less than 1,500 feet above the surface of the earth, and prohibited and restricted areas (except certain specified restricted areas).

Control area—Unless otherwise specified, airspace extending upward from 700 feet above the surface of the earth (until designated from 1,200 feet or more).

Control zone—Airspace extending upward from the surface of the earth which may include one or more airports and is normally a circular area of five statute miles in radius with extensions where necessary to include instrument approach and departure paths.

Transition area—Airspace extending upward from 700 feet or more above the surface of the earth when designated in conjunction with an airport for which an approved instrument approach procedure has been prescribed, or from 1,200 feet or more above the surface of the earth when designated in conjunction with airway route structures or segments. Unless otherwise limited, transition areas terminate at the base of the overlying controlled airspace.

• **COURSE**—The intended direction of flight in the horizontal plane. Also a leg of an L/MF range.

• **CRUISE**—A word used instead of the word "maintain" in an ATC clearance to indicate to a pilot that climb to and descent from the assigned altitude may be made at his discretion.

• **CRUISING ALTITUDE**—A level determined by vertical measurement from mean sea level.

DISCRETE FREQUENCY—A frequency assigned a particular function.

• **DISTANCE MEASURING EQUIPMENT (DME)**—Equipment (airborne and ground) used to measure, in nautical miles, the distance of an aircraft from a navaid.

• **DME FIX**—A geographical position determined by reference to a navaid which provides distance and azimuth information and defined by a specified distance in nautical miles and a radial in degrees magnetic from that aid.

• **DME SEPARATION**—Spacing of aircraft in terms of distance determined by reference to distance measuring equipment (DME).

• **EN ROUTE AIR TRAFFIC CONTROL SERVICE**—Air traffic control service provided aircraft on an IFR flight plan, generally by centers, when these aircraft are operating between departure and destination terminal areas.

EXPECTED APPROACH CLEARANCE TIME (EAC)—The time at which it is expected that an arriving aircraft will be cleared to begin approach for a landing.

• **EXPECTED FURTHER CLEARANCE TIME (EFC)**—The time at which it is expected that additional clearance will be issued to an aircraft.

• **FINAL APPROACH—IFR**—The flight path of an aircraft which is inbound to the airport on an approved final instrument approach course, beginning at the point of interception of that course and extending to the airport or the point where circling for landing or missed approach is executed.

• **FINAL CONTROLLER**—That controller providing final approach guidance utilizing precision approach radar equipment.

FINAL APPROACH—VFR—A flight path of a landing aircraft in the direction of landing along the extended runway centerline from the base leg to the runway.

• **FIX**—A geographical position determined by visual reference to the surface by reference to one or more radio navais, by celestial plotting, or by another navigational device.

• **FLIGHT LEVEL (FL)**—A level of constant atmospheric pressure related to a reference datum of 29.92 inches of mercury. Each is stated in three digits that represent hundreds of feet. For example, FL 250 represents a barometric altimeter indication of 25,000 feet. FL 255 indicates 25,500 feet.

• **FLIGHT PLAN**—Specified information relating to the intended flight of an aircraft that is filed orally or in writing with an air traffic control facility.

FLIGHT SERVICE STATION (FSS)—A facility operated by the FAA to provide flight assistance service.

• **FLIGHT VISIBILITY**—The average forward horizontal distance from the cockpit of an aircraft in flight at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

• **GROUND VISIBILITY**—Prevailing horizontal visibility near the earth's surface as reported by the U.S. Weather Bureau or an accredited observer.

• **HOLDING**—A predetermined maneuver which keeps an aircraft within a specified airspace while awaiting further clearance.

• **"IDENT" FEATURE**—The special feature in ATCRBS equipment and the "I/P" feature in certain SIF equipment used to distinguish one displayed select code from other codes.

• **INTERROGATOR**—The ground-based surveillance radar beacon transmitter-receiver which scans in synchronism with a primary radar, transmitting discrete radio signals which repetitiously request all transponders, on the mode being used, to reply. The replies received are then mixed with the primary radar video to be displayed on the same plan position indicators. **"I/P" FEATURE**—(See "IDENT" feature.)

• **JET ADVISORY SERVICE**—The service provided certain civil aircraft while operating within radar and nonradar jet advisory areas. Within radar jet advisory areas, civil aircraft receiving this service are provided radar flight following, radar traffic information, and vectors around observed traffic. In nonradar jet advisory areas, civil aircraft receiving this service are afforded standard IFR separation from all other aircraft known to ATC to be operating within these areas.

JET ROUTES—A high altitude route system, at the above 18,000 feet MSL, predicated on a network of designated high altitude VHF/UHF facilities. (For operating procedures applicable to this system see EN ROUTE).

• **JOINT USE RESTRICTED AREA**—A restricted area within which IFR and/or VFR flight operations may be authorized by the controlling agency (a FAA facility) when not in use by the using agency.

MAXIMUM AUTHORIZED ALTITUDE (MAA)—The highest altitude on a Federal airway, jet route, or other direct route for which a MEA is designated in F.A.R. Part 95 at which adequate reception of navigation aid signals is assured.

MINIMUM CROSSING ALTITUDES (MCA)—The lowest altitudes at certain radio fixes at which an aircraft must cross when proceeding in the direction of a higher minimum en route IFR altitude.

MINIMUM EN ROUTE IFR ALTITUDE (MEA)—The altitude in effect between radio fixes which assures acceptable navigational signal coverage and meets obstruction clearance requirements between those fixes.

MINIMUM OBSTRUCTION CLEARANCE ALTITUDE (MOCA)—The specified altitude in effect between radio fixes on VOR airways, off-airway routes on route segments, which meets obstruction clearance requirements for the entire route segment and which assures acceptable navigational signal coverage only within 22 nautical miles of a VOR.

MINIMUM RECEPTION ALTITUDE (MRA)—The lowest altitude required to receive adequate signals to determine specific VOR/VORTAC/TACAN fixes.

MODE—The number or letter referring to the specific pulse spacing of the signal transmitted by an interrogator.

NOTICE TO AIRMEN—A notice identified either as a NOTAM or Airmen Advisory containing information concerning the establishment, condition, or change in any component of, or hazard in, the National Airspace System, the timely knowledge of which is essential to personnel concerned with flight operations.

(1) **NOTAM**. A Notice to Airmen in message form requiring expeditious and wide dissemination by telecommunications means.

(2) **Airmen Advisory**. A Notice to Airmen normally only given local dissemination, during preflight or in-flight briefing, or otherwise during contact with pilots.

• **OUTER FIX**—A fix in the destination terminal area, other than the approach fix, to which aircraft are normally cleared by an air route traffic control center or a terminal area traffic control facility, and from which aircraft are cleared to the approach fix or final approach course.

• **PRECISION APPROACH**—An instrument approach conducted in accordance with directions issued by a controller referring to the surveillance radar display until the aircraft is turned onto final approach and, thereafter, to a precision approach radar display.

• **PROHIBITED AREA**—Airspace of defined dimensions identified by an area on the surface of the earth within which flight is prohibited.

• **RADAR (RADIO DETECTION AND RANGING)**—A device which, by measuring the time interval between transmission and reception of radio pulses and correlating the angular

orientation of the radiated antenna beam or beams in azimuth and/or elevation, provides information on range, azimuth and/or elevation of objects in the path of the transmitted pulses.

Radar beacon (secondary radar)—A radar system in which the object to be detected is fitted with cooperative equipment in the form of a radio receiver/transmitter (transponder). Radio pulses transmitted from the searching transmitter/receiver (interrogator) site are received in the cooperative equipment and used to trigger a distinctive transmission from the transponder. This latter transmission rather than a reflected signal, is then received back at the transmitter/receiver site.

• **RADAR ADVISORY**—The term used to indicate that the provision of advice and information is based on radar observation. (See Advisory Service)

• **RADAR CONTACT**—The term air traffic controllers use to indicate that an aircraft is identified on the radar display and that radar service can be provided until radar identification is lost or radar services is terminated.

• **RADAR FLIGHT FOLLOWING**—The radar tracking of identified aircraft targets and the observation of the progress of such flights sufficiently to retain identity.

• **RADAR HANDOFF**—That action whereby radar identification of, radio communications with and, unless otherwise specified, control responsibility for an aircraft is transferred from one controller to another without interruption of radar flight following.

• **RADAR IDENTIFICATION**—The process of ascertaining that a radar target is the radar return from a particular aircraft.

• **RADAR SERVICE**—A term which encompasses one or more of the following services based on the use of radar which can be provided by a controller to a pilot of a radar-identified aircraft.

Radar Separation—Radar spacing of aircraft in accordance with established minima.

Radar Navigation Guidance—Vectoring aircraft to provide course guidance.

Radar Monitoring—The radar flight following of aircraft, whose primary navigation is being performed by the pilot, to observe and note deviations from its authorized flight path airway, or route. This includes noting aircraft position relative to approach fixes and major obstructions.

• **RADAR SURVEILLANCE**—The radar observation of a given geographical area for the purpose of performing some radar function.

• **RADAR TRAFFIC INFORMATION**—Information on any aircraft observed on the radar scope which, in the judgment of the controller, appears to constitute a hazard to the operation of an aircraft being controlled.

• **RADAR VECTOR**—A heading issued to an aircraft to provide navigational guidance by radar.

RADIAL—A radial is a magnetic bearing extending from a VOR, VORTAC, or TACAN.

• **REPORTING POINT**—A geographical location in relation to which the position of an aircraft is reported.

• **RESTRICTED AREA**—Airspace of defined dimensions identified by an area on the surface of the earth within which the flight of aircraft, while not wholly prohibited, is subject to restrictions.

- **SELECT CODE**—That code displayed when the ground interrogator and the airborne transponder are operating on the same mode and code simultaneously.
- **SEPARATION MINIMA**—The minimum longitudinal, lateral, or vertical distances by which aircraft are spaced through the application of air traffic control procedures.
- **SPECIAL VFR CONDITIONS (SPECIAL VFR MINIMUM WEATHER CONDITIONS)**—Weather conditions which are less than basic VFR weather conditions and which permit flight under Visual Flight Rules.
- **SPECIAL VFR OPERATIONS**—Aircraft operating in accordance within control zones in weather conditions less than the basic VFR weather minimum.
- **STRAIGHT-IN APPROACH—IFR**—An instrument approach wherein final approach is begun without first having executed procedure turn.
- **STRAIGHT-IN APPROACH—VFR**—Entry of the traffic pattern by interception of the extended runway centerline without executing any other portion of the traffic pattern.
- **SURVEILLANCE APPROACH**—An instrument approach conducted in accordance with directions issued by a controller referring to the surveillance radar display.
- **TRACK**—The flight path of an aircraft over the surface of the earth.
- **TRAFFIC PATTERN**—The traffic flow that is prescribed for aircraft landing at, taxiing on, and taking off from an airport. The usual components of a traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach.
- **TRANSPONDER**—The airborne radar beacon receiver-transmitter which automatically receives radio signals from all interrogators on the ground, and which selectively replies with a specific reply pulse or pulse group only to those interrogations being received on the mode to which it is set to respond.

VISIBILITY, PREVAILING—The horizontal distance at which targets of known distance are visible over at least half of the horizon. It is normally determined by an observer on or close to the ground viewing buildings or other similar objects during the day and ordinary city lights at night. Under low visibility conditions the observations are usually made at the control tower. Visibility is **REPORTED IN MILES AND FRACTIONS OF MILES** in the Aviation Weather Report. If a single value does not adequately describe the visibility, additional information is reported in the "Remarks" section of the report.

VISIBILITY, RUNWAY—The horizontal distance at which a stationary observer near the end of the runway can see an ordinary light (about 25 candlepower) at night or a dark object against the horizon sky in the daytime. In practice the human observer is used very little for this observation. Instead runway visibility is normally determined by a transmissometer (a photoelectric device calibrated in terms of a human observer). It is **REPORTED IN MILES AND FRACTIONS OF MILES** in the "Remarks" section of the Aviation Weather Report. A meter in the control tower gives the FAA traffic controller a continuous indication of the runway visibility at transmissometer locations. Runway visibility, where available, is used in place of prevailing visibility for the determination of minimums on a transmissometer runway. This program is gradually being replaced by Runway Visual Range at transmissometer locations.

VISIBILITY, RUNWAY VISUAL RANGE (RVR)—An instrumentally derived value, based on standard calibrations, that represents the horizontal distance a pilot will see down the runway from the approach end; it is based on the sighting of either high intensity runway lights or on the visual contrast of other targets—whichever yields the greater visual range. RVR, in contrast to prevailing or runway visibility, is based on what a pilot in a moving aircraft should see looking down the runway. RVR is horizontal, **AND NOT SLANT**, visual range. It is based on the measurement of a transmissometer made near the touchdown point of the instrument runway and is **REPORTED IN HUNDREDS OF FEET**. At the present time, RVR observations are automatically furnished to FAA tower controllers at approximately 25 locations from readout equipment connected to the remote transmissometer installation. RVR provides an additional operating minimum at fields equipped with specified navigational aids. For example, at the present time the RVR minimum at Newark is 2000 ft. (in combination with a minimum descent altitude of 218' MSL) for both take-offs and landings regardless of the reported ceiling and visibility.

- **VISUAL APPROACH**—An approach wherein an aircraft on an IFR flight plan, operating in VFR conditions and having received an air traffic control authorization, may deviate from the prescribed instrument approach procedures and proceed to the airport of destination by visual reference to the surface.

VOT (VERY HIGH FREQUENCY OMNITEST)—A ground originating test signal used to check the accurate alignment of a VOR receiver.

ABBREVIATIONS

Note: "s" may be added for plural, or as appropriate.

AAS.....	Airport Advisory Service at FSS. Located airport shown in Location Column.	auto.....	automatic	DF.....	direction finder	hi.....	high-	LOM.....	compass locator at outer marker ILS
AB.....	Continuous automatic transcribed broadcast service.	aux.....	auxiliary	discontd...	discontinued	hr.....	hour	long.....	longitude
AC.....	Approach Control Tower, FAA (transmits on voice channel or associated ranges and ILS in addition to frequencies listed).	avbl.....	available	DME.....	UHF standard (TACAN compatible) distance measuring equipment	H-SAB....	Non-directional rbn providing auto trans wea service.	LRCO.....	Limited Remote Communication Outlet.
acft.....	aircraft	awy.....	airway	dptg.....	departing	hvy.....	heavy	M.....	magnetic (after a bearing)
adjt.....	adjacent	B.....	Scheduled Broadcasts weather at 15 and 45 minutes after the hour; Air Force Broadcasts, generally, 29 minutes).	DVFR.....	Defense VFR Flight Rule.	hwy.....	highway	MA.....	Range (adcock, vertical raditors), power less than 50 watts.
admin....	administration	BC.....	back course	efctv.....	effective	ident.....	identification	MAA.....	maximum authorized altitude
AGL.....	above ground level	bcn.....	beacon	elev.....	elevation	IFF.....	Identification Friend from Foe	mag.....	magnetic
AIM.....	Airman's Information Manual.	bcst.....	broadcast	emgcy.....	emergency	IFR.....	Instrument Flight Rules	maint.....	maintain, maintenance
AL.....	Approach and Landing Chart	bldg.....	building	eng.....	engine	IFSS.....	International Flight Service Station	ma j.....	major
alt.....	altitude	bndry.....	boundary	eqpmt.....	equipment	ILS.....	Instrument landing system	max.....	maximum
amdt.....	amendment	brg.....	bearing	excp.....	except	imdtly....	immediately	mc.....	megacycles
ANRA.....	air navigation radio aids	btn.....	between	extn.....	extension	inbnd....	inbound	MCA.....	minimum crossing altitude
ant.....	antenna	C.....	Control Tower, FAA.	extsv.....	extensive	info.....	information	MEA.....	minimum en-route IFR altitude
apch.....	approach	CI.....	Control Tower City, County, Private, etc.).	facil.....	facility	inop.....	inoperative	meml.....	memorial
apchg....	approaching	clad.....	closed	FL.....	Flight Level.	inst.....	instrument	MH.....	Non-directional radio beacon (homing), power less than 50 watts
APP CON.	Approach control	clmc.....	clearance	flashg....	flashing	int.....	Intersection	ml.....	mile
aprdy....	approximately	cntr.....	center	fld.....	field	intl.....	International	min.....	minimum or minute
arpt.....	airport	Co.....	county	flt.....	flight	intsv....	Intensive	ML.....	Range (loop radiators), power less than 50 watts.
arr.....	arrival/arrive	comm.....	communication	flwg.....	following	J-bar....	jet runway barrier	MM.....	middle marker ILS
ARSR....	Air Route Surveillance Radar.	comand...	commissioned	FM.....	fan marker	kc.....	kilocycles	MOCA....	minimum obstruction clearance altitude
ARTCC....	Air Route Traffic Control Center	comng....	commissioning	fone.....	telephone	lat.....	latitude	mod.....	modernization/modification
ASDE.....	airport surface detection equipment	config....	configuration	freq.....	frequency	lcl.....	local	MRA.....	minimum reception altitude
ASR.....	Arpt Surveillance Radar.	constr....	construction	FSF.....	Flight Service Facility.	lclzr....	localizer	mrkd.....	marked
ATC.....	air traffic control	constrd...	constructed	FSS.....	Flight Service Station	lctd.....	located	mrkg....	marking
ATIS.....	Automatic Terminal Information Service	cont.....	continuous/continuously	FVFR.....	Flight Following Flight Plan.	lctn.....	location		
		crs.....	course	GCA.....	ground controlled approach	LFR.....	Low/Medium frequency radio range		
		CS/T.....	combined station/tower	gnd.....	ground	lgt.....	light		
		ctc.....	contact	GWT.....	gross weight	lgtg....	lighted		
		ctl.....	control	H.....	Non-directional radio beacon (homing), power 50 watts to less than 2000 watts	LMM.....	compass locator at middle marker ILS		
		ctld.....	controlled	HH.....	Non-directional radio beacon (homing), power 2000 watts or more	Ind.....	land		
		delgt....	daylight			Indg....	landing		
		demand...	decommissioned						
		demol....	demolition						
		dep.....	departure						
		DEP CON.	Departure control						

MRL.....	Range (loop radiators), power 50 watts or more, but less than 150 watts.	RAE.....	Royal Aircraft Establishment visual glide slope indicator	S.....	Simultaneous range, homing signal and/or voice.	T.....	true (after a bearing)	vcsty.....	vicinity
MSL.....	mean sea level	RAPCON...	radar approach control (USAF)	SABH....	Non-directional rbn having limited navigational use. Provides auto wea bcd	TACAN...	UHF navigational facility—omni-directional course and distance information	VFR.....	visual flight rules
muni.....	municipal	RATCC....	radar air traffic control center (NAVY)	SID.....	Standard Instrument Departure.	trf.....	traffic	VHF.....	Very hi freq
natl.....	national	rbn.....	radio beacon	SIF.....	Selective Identification Feature (of the basic Mark X radar beacon system)	trk.....	take-off	VOR.....	VHF navigational facility—omni-directional, course only
navaid....	navigational aid	RCO.....	Remote Communications Outlet.	sked.....	schedule	trmpy....	temporarily	VOR-DME..	collocated VOR facility and UHF standard distance measuring equipment
ngt.....	night	rcv.....	receive	SLMM...	Simultaneous middle marker compass locator and twr voice transmission.	trmpy....	temporary	VORTAC...	collocated VOR and TACAN navigational facilities
nmi.....	nautical mile/s	rcvg.....	receiving			trans....	transcribed	VOT.....	a VOR Receiver Testing Facility
No.....	number	rcvr.....	receiver			trml.....	terminal	vsby.....	visibility
obstr....	obstruction	rdo.....	radio			trng.....	training	W.....	Without voice facilities on range frequency.
ocl.....	octane	reconstr...	reconstruction			tsmt.....	transmit	wea.....	weather
OML.....	outer marker ILS	REIL.....	runway end identification lights			tsmtg....	transmitting	WB.....	Weather Bureau
operg....	operating	relcd....	relocated			tsmlr....	transmitter	WIP.....	work in progress
oprn.....	operation	Req.....	Operates on request.			TV.....	television	wt.....	weight
outbd....	outbound	rgt.....	right			twr.....	tower	Z.....	VHF station location marker at a LF range station.
PAR.....	Precision Apch Radar.	RL.....	Range (loop radiators), power 150 watts or more.	SLOM...	Simultaneous outer marker compass locator and twr voice transmission.	TWEB....	trans. wea bcd	Z.....	Greenwich mean time.
patn.....	pattern					trwy....	taxiway		
permly...	permanently	rag.....	range			UFN.....	until further notice		
p-line....	pole line	rawy....	runway			UHF.....	Ultra hi freq		
pwr.....	power	ref.....	rough			unavbl...	unavailable		
quad.....	quadrant	RVR.....	runway visual range	smi.....	statute mile/s	unctd....	uncontrolled		
RA.....	Range (odcock, vertical radiators), power 150 watts or more.	RVV.....	runway visibility values	SR.....	sunrise	unlghtd...	unlighted		
rad.....	radial			SS.....	sunset	unmrkd...	unmarked		
				sta.....	station	VASI.....	visual approach slope indicator		
				sya.....	system				

THE NOTAM CODE

INTRODUCTION

The NOTAM Code provides for coding NOTAM information to reduce telecommunications transmission time and reduce translation difficulties in the International Service.

A NOTAM Code group contains 5 letters. The first letter is always the letter Q to indicate a code abbreviation for use in the composition of NOTAMs. The letter Q has been chosen to avoid conflict with any assigned radio call sign.

NOTAM code significances shall be amplified or completed where necessary by adding appropriate words, contractions, frequencies, location identifiers, place names, or figures. Approved abbreviations shall be used in preference to plain language whenever possible. The information necessary to complete a NOTAM code group, as indicated by a blank space, shall be given except when (1) the blank spaces are enclosed within parentheses or brackets to indicate their completion is optional; e.g., LHX QIEIK 15 MIN. Meaning: the LaJunta Colorado airport beacon is available on request at 15 minutes' notice; or (2) an alternative meaning shown in parentheses is selected and the blank space in this alternative meaning is complete; e.g., QAPOK 116.9. Meaning: the radio range on 116.9 Mc. resumed normal operation.

Expressions or words in parentheses which do not include blank spaces have the following significances:

(1) When following a blank space, signifies the

explanation of information to be used in filling the preceding blank.

(2) When following a word or expression, signifies an alternative to the word or expression.

CODE GROUP FORMATION

5-letter NOTAM code groups are formed in the following manner:

(1) *First Letter.*—The letter Q.

(2) *Second and Third Letters.*—The appropriate combination of 2 letters, selected from the "2nd and 3rd letters" section of the code, identify the facility, service or danger to aircraft in flight being reported. The second letter has been restricted to A, E, I, O, or U. These letters also serve to classify the aid, facility, or service described: i.e., the letters A and E signify radio aids. The letter I signifies lighting facilities. The letters O and U signify airports, search and rescue, and dangers to aircraft in flight.

(3) *Fourth and Fifth Letters.*—The appropriate combination of 2 letters, selected from the "4th and 5th Letters" section, denote the operating status of the facility, service, or danger to aircraft being reported. The fourth letter has been restricted to A, E, I, O, or U.

DECODE SECOND AND THIRD LETTERS

2nd & 3rd Letters	SIGNIFICATION	2nd & 3rd Letters	SIGNIFICATION
RADIO AIDS			
AA	... [<i>specify TWR, APP, ACC or FIC</i>] air traffic services receiver ... kc/s. (<i>or</i> ... Mc/s.).	AY	200 Mc/s. Distance Measuring Equipment.
AB	Inner marker, Instrument Landing System.	AZ	Station location marker VHF.
AC	... [<i>specify TWR, APP, ACC or FIC</i>] air traffic services transmitter ... kc/s. (<i>or</i> ... Mc/s.).	EA	En-route Surveillance Radar.
AD	Middle marker, Instrument Landing System.	EB	Broadcasting station (public).
AE	Outer marker, Instrument Landing System.	EC	CONSOL or CONSOLAN station.
AF	Fan-type marker.	ED	DECCA or DECTRA.
AG	Glide path, Instrument Landing System.	EE	Ground Controlled Approach System (GCA).
AH	Non-directional Beacon (NDB).	EF	Terminal Area Surveillance Radar.
AJ	Instrument Landing System (ILS).	EG	Gee.
AJ	Radio range (other than VOR) and associated voice communications.	EH	Elevation element of the Precision Approach Radar (PAR).
AK	Radio receiving facilities.	EI	Monitoring device associated with ... (<i>specify</i>) radio aid.
AL	Localizer, Instrument Landing System.	EJ	All air-ground facilities (<i>except</i> ...).
AM	Locator, inner, Instrument Landing System.	EK	Precision Approach Radar (PAR).
AN	TACAN.	EL	LORAN.
AO	Locator, outers, Instrument Landing System.	EM	Azimuth element of the Precision Approach Radar (PAR).
AP	VOR (VHF Omnidirectional Radio Range) and associated voice communications.	EN	DME (1000 Mc/s. Distance Measuring Equipment).
AQ	VOR (VHF Omnidirectional Radio Range).	EO	Beam Approach Beacon System (BABS).
AR	Radio range (other than VOR).	EP	Radar responder beacon.
AS	Radio range leg.	EQ	Surveillance Radar Element (SRE) of GCA.
AT	Attentional signal.	ER	Radio transmitting facilities.
AU	Meteorological communications ... kc/s. (<i>or</i> ... Mc/s.).	ES	All radio-navigation facilities (<i>except</i> ...).
AV	Voice communications ... kc/s. (<i>or</i> ... Mc/s.).	ET	Teletypewriter transmitting facility (ies).
AW	Unassigned.	EU	Radio direction-finding station ... (<i>frequency or type</i>).
AX	Non-directional Beacon (NDB) and voice facility.	EV	VORTAC (the combination of VOR and TACAN).
		EW	Ground interrogator, SSR system.
		EX	Unassigned.
		EY	Ground movement radar.
		EZ	Unassigned.

LIGHTING FACILITIES

IA	Boundary lights.	ID	Channel lights.
IB	Aerodrome beacon.	IE	Light beacon.
IC	Unassigned.	IF	Floodlights.

DECODE **SECOND AND THIRD LETTERS (Contd.)**

2nd & 3rd Letters	SIGNIFICATION	2nd & 3rd Letters	SIGNIFICATION
LIGHTING FACILITIES (Contd.)			
IG	Angle-of-approach lights.	IP	Approach light system [type . . . {specify <i>LSA</i> (low intensity) or <i>LSB</i> (high intensity)}] (for runway number . . .).
IH	Taxiway lights.	IQ	Runway alignment beacon.
II	Hazard beacon.	IR	Runway lights [type . . . {specify <i>LSA</i> (low intensity) or <i>LSB</i> (high intensity)}] (for runway number . . .).
IJ	Threshold lights (for runway number . . .).	IS	Strip lights [for strip . . . (number or magnetic direction)].
IK	Flares.	IT-IV	Unassigned.
IL	All landing area lighting facilities.	IX	Flashing sequence lights.
IM	Identification beacon.	IZ	Airway course lights.
IN	Unassigned.		
IO	Obstruction lights.		

AERODROMES — SEARCH AND RESCUE — DANGERS TO AIRCRAFT IN FLIGHT

OA	Land aerodrome.	UB	Mooring buoys.
OB	Beaching facilities.	UC	Unassigned.
OC	Water aerodrome.	UD	Prohibited, restricted or danger area designated as . . . (name or reference identification).
OD	Meteorological forecast service.	UE	Aircraft.
OE	Meteorological observation service.	UF	Fixed balloons.
OF	Meteorological watch service.	UG	Bombing or aerial depth charge dropping.
OG	Runway arresting gear.	UH	Air exercises (or flying displays).
OH	Helicopter landing area.	UI	Gun or missile firing.
OI-OL	Unassigned.	UJ	Glider flying.
OM	All runways [except number(s) . . .].	UK	Demolition of explosives.
ON	Stopway for runway number.	UL	Landing direction indicator.
OO	Taxiway(s).	UM	Mooring and docking facilities.
OP	Rescue vessel.	UN	Parachute jumping exercises.
OQ	Ocean Station Vessel.	UO-UP	Unassigned.
OR	Refueling [. . . type fuel(s) or . . . octane].	UQ	Apron.
OS	Search and rescue aircraft [specify <i>VLR</i> , <i>LRG</i> , <i>MRO</i> , <i>SRG</i> or <i>HEL</i>].	UR	Runway(s) and number(s).
OT	Crash and fire fighting facilities.	US	Strip . . . (number or magnetic direction).
OU	Unassigned.	UT	Grass landing area.
OV	. . . [specify <i>TWR</i> , <i>APP</i> , <i>ACC</i> or <i>FIC</i>] air traffic service.	UU	Unassigned.
UA		UV	Fog dispersal equipment.
OY	Unassigned.	UW-	
OW-	Warship.	UY	Unassigned.
OZ	Alighting area.	UZ	Runway threshold (number . . .).

DECODE **FOURTH AND FIFTH LETTERS**

4th & 5th Letters	SIGNIFICATION	4th & 5th Letters	SIGNIFICATION
HAZARD OR STATUS OF OPERATION OR CONDITION OF FACILITIES			
AA	Unassigned.	EC	Characteristics <i>or</i> identification <i>or</i> radio call sign changed to . . .
AB	Usable for length of . . . and width of . . .	ED	Operating frequency(ies) will be changed to . . . kc/s. (<i>or</i> . . . Mc/s.) effective . . . (date/time).
AC	Covered by snow to a depth of . . . <i>Note.—This snow is not compacted.</i>	EE-EG	Unassigned.
AD	Cleared of soft snow, full length and width.	EH	Not heard.
AE	Totally free of snow and ice.	EI-EL	Unassigned.
AF	Covered by [. . . (type)] ice to a depth of . . .	EM	Military operations only.
AG-AH	Unassigned.	EN	Not available due to . . . (specify reason) from . . . (date/time) for an unknown duration [<i>or</i> until . . . (date/time)].
AI	Operating without tone modulation.	EO	Unassigned.
AJ	Operating without coding or flashing.	EP	Available on prior permission (of . . .) only.
AK	Covered by compacted snow to a depth of . . .	EQ-ER	Unassigned.
AL	Operating on reduced power.	ES	Out of service from . . . (date/time) for an unknown duration [<i>or</i> until . . . (date/time)] due to the following condition(s) . . .
AM	Snow clearance in progress [estimated time of completion is . . . (date/time)].	ET	Test operation only. NOT for operational use.
AN	Grass cutting in progress [estimated time of completion is . . . (date/time)].	EU-EV	Unassigned.
AO	Marked by . . .	EW	Completely withdrawn.
AP	Work is in progress [estimated time of completion is . . . (date/time)].	EX	Unassigned.
AQ	Work completed.	EY	Is outside the limits of its assigned ocean station.
AR	Snow clearance completed.	EZ	Is within the limits of its assigned ocean station.
AS	Grass cutting completed.	IA-IB	Unassigned.
AT	Sanding is in progress [estimated time of completion is . . . (date/time)].	IC	Report of apparent unreliability or track displacement hereby is cancelled.
AU	Appears unreliable.	ID	Available on request to . . .
AV	Covered by ice patches.	IE	Unassigned.
AW	Height of snowbanks is . . . (figures and units).	IF	Flight checked and found reliable.
AX	Braking action is . . . (A = good, B = medium, C = poor).*	IG-IJ	Unassigned.
AY	Are to avoid area, radius of danger being . . . (about the point . . .).	IK	Available on request (to . . .) immediately [<i>or</i> at . . . (time period) notice].
AZ	Will take place from . . . (date/time) for an unknown duration [<i>or</i> until . . . (date/time)] (on the days of . . . between the hours of . . . and . . .) at . . . (location) (within the sector of . . . and a radius of . . .) at . . . height above . . . (datum).	IL	Hours of service are now . . .
EA	Unassigned.	IM	Unassigned.
EB	Location change to . . . effective . . . (date/time).	IN	Operative (<i>or</i> re-operative), activated (<i>or</i> re-activated) from . . . (date/time) for an unknown duration [<i>or</i> until . . . (date/time)].
		IO	Operating normally.

*Indicates type of acft or vehicle making report.

DECODE
FOURTH AND FIFTH LETTERS (Contd.)

4th & 5th Letters	SIGNIFICATION	4th & 5th Letters	SIGNIFICATION
HAZARD OR STATUS OF OPERATION OR CONDITION OF FACILITIES (Contd.)			
IP	Track(s) reported to be displaced (. . . degrees) (. . . direction) of published bearing(s), other tracks probably have shifted.	OV-	Unassigned.
IQ	To be used as radio beacon only.	OW	Unassigned.
IR	Magnetic track(s) towards station is are now . . . [will be . . . at . . . (date/time)].	OX	Exercising at . . . (date/time, location and height above the specified datum).
IS	Operative (or re-operative) subject to conditions/limitations already published.	OY-	Unassigned.
IT	Aircraft restricted to runways and taxiways.	OZ	Unassigned.
IU	Unserviceable for aircraft heavier than . . . tons.	UA	Closed to all operations from . . . (date/time) for an unknown duration [or until . . . (date/time)].
IV	Unsafe from . . . (date/time) for an unknown duration [or until . . . (date/time)].	UB-UC	Unassigned.
IW-IZ	Unassigned.	UD	Closed to all night operations from . . . (date/time) for an unknown duration [or until . . . (date/time)].
OA-OF	Unassigned.	UE	Unassigned.
OG	Operative but ground checked only, awaiting flight check.	UF	Closed for an unknown duration due to flood.
OH-OJ	Unassigned.	UG	Closed for an unknown duration [or until . . . (date/time)] due to ice or snow.
OK	Resumed normal operation.	UH	Closed for an unknown duration [or until . . . (date/time)] due to thaw.
OL	Track(s) ground checked, approved for instrument flying.	UI	Closed from . . . (date/time) for an unknown duration [or until . . . (date/time)] for maintenance.
OM	Shut down for maintenance from . . . (date/time) for an unknown duration [or until . . . (date/time)]—disregard all signals.	UJ-UL	Unassigned.
ON-OQ	Unassigned.	UM	Operating in an unmonitored status.
OR	Previously promulgated shutdown has been cancelled.	UN-US	Unassigned.
OS	Unassigned.	UT	Operative but caution advised due to following condition(s) . . .
OT	New facility in operation.	UU	Suitable for . . . (specify) equipped aircraft only.
OU	Operating without interruption for voice transmissions from . . . (date/time) for an unknown duration [or until . . . (date/time)].	UV	Covered by slush to a depth of . . .
		UW	Covered by water to a depth of . . .
		UX-	Unassigned.
		UZ	Unassigned.

NOTICE TO THE EDITOR

This sheet should only be used to submit changes, corrections or comments concerning the Airman's Information Manual. Just tear out, fold, staple and mail. No postage is necessary.

NOTE: All inquiries and information concerning subscriptions to these publications, and change of address should be sent to the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Indicate Appropriate Section. Date _____

- ☐ Section I, Basic Flight Manual
- ☐ Section II, ATC Operations and Procedures
- ☐ Section III, Flight Data and Special Operations
- ☐ Section III-A, Notices to Airmen
- ☐ Section IV, Airport Directory
- ☐ Section IV-A, Airport/Facility Directory

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PUBLICATION SCHEDULE-FY 1966**

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Effective Date	Section I	Section II	Section III	Section III-A	Section IV	Section IV-A
September 30				September 20		
October 14			September 27	September 27		September 27
October 28				October 18		
November 11			October 25	October 25		October 25
November 25				November 15		
December 9			November 22	November 22		November 22
December 23				December 13		
January 6			December 20	December 20		December 20
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May 12				May 2		
May 26			May 9	May 9		May 9
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June 23			June 6	June 6		June 6

PARACHUTE JUMPING AREAS

The following tabulation lists all known parachute jumping sites in the United States. Unless otherwise indicated, all activities are conducted during daylight hours and under VFR conditions.

ALABAMA

Fort Rucker, Calms AAF: 5 mi radius. Week-ends and holidays 1200-SS; intermittently week-days. Up to 14,500' MSL.
Headland Mun Arpt: 1 mi E. 1200 LST to sunset. Sundays. Up to 12,000'.

ARIZONA

Glendale, Luke AFB: Daily 1500Z to 0500Z. Up to 5100' MSL.
Moran Air Park: Daily weekends, and evenings. Up to 6,500; occasionally 10,000' MSL and 24,000' MSL.
Phoenix, Deer Valley Arpt: 4 mi WSW. Up to 14,000' MSL; 8 mi ESE. Up to 7000' MSL.
Scottsdale, Thunderbird Academy Airport: 1 mi W. Up to 10,000' MSL.
Tucson, Ryan Fld: Up to 12,000'.

ARKANSAS

Clarkville Arpt: Weekends; contact Ft. Smith Rdo for info concerning unscheduled ngt and holiday activities. Up to 13,000' MSL.
Fayetteville: 6 mi N Drake Arpt. Mon thru Fri 1900Z-SS. Sat, Sun, Holidays 1400Z-SS. Up to 12,500'.
Jonesboro Mun Arpt: Weekends, with unscheduled parachuting week days. For confirmation of activities contact Walnut Ridge FSS.

CALIFORNIA

Arvin: 8 mi SW. Daily, day and ngt. Up to 20,000' MSL.
Avenal Arpt: 0.5 mi W of runway, weekends and holidays 1600 to 0300Z occasional jumps week days 0000-0300Z; up to 10,000'.
Black Point: Sky diving weekends up to 12,500'.
Black Point: 6 mi NE Hamilton AFB. Mon thru Sat up to 1500' MSL.
Colton Arpt: Weekends.
Camp Pendleton, Oceanside (San Diego Co.): E half of V23/V163 arwys between San Clemente and Oceanside. All drops made within the Oceanside Corps Maneuver Area from 1,200 to 4,500'. Day and ngt. Current info may be obtained from FSS San Diego, Calif.
Clear Lake: Into Clear Lake at 39°05'N, 122°51'W. Mon thru Sat. Up to 4400' MSL.
• Davis, Yolo Co. Intl Arpt: 800' E of apch end runway 36. Daily. SR-SS. Up to 12,500' MSL.
El Centro NAF: 0700-1600P (1500-2400Z) Mon-Fri. Up to FL 400.
Elmore, Skylark Fld: Up to 13,700' MSL. Moderate week-days, hvy weekends and holidays.
Fort Irwin (Bicycle Lake AAF): Weekends, holidays, and occasionally weekdays. Up to 12,000' MSL.
Fort Ord (Fritzsche Control Zone): Free fall parachute activity weekends, holidays, and occasionally wkdays, from alts ranging from 2800'-15,000', opening at absolute alts of 2000'-2500'. Center of drop zone lctd at 36°38'N, 121°46'W in Restricted Area R-2511. Ctc Fritzsche Twr for advisory info.
Foss Lake Arpt: 6 mi on the 65° radial Oceanside VOR. Weekends and holidays. Up to 15,000'.
Fresno Air Terminal: 5½ mi NE. Sundays. From 12,500'.
Fresno, Chandler Arpt: 5 mi W. Heavy activity weekends, holidays, and occasionally weekdays. Up to 15,000'.
Hollister Mun: 1 mi NE. Weekends and occasionally week days. 12,500' MSL.
Lancaster, Wm. J. Fox Fld: Weekends and holidays, one half mile S of arpt. Up to 15,000' MSL.
Lake Berryessa: Lat 38°31', 122°12'. Mon thru Sat. Up to 2000' MSL.
Lakeside (San Diego Co.): 8 mi ENE Gillespie Fld, Santee, Calif., two mi out of ctl area. Daily, greatest activity weekends. Up to 15,000'.
Lincoln Mun Arpt: Weds 1200 to 2200 and weekends and holidays from sunrise to 2200, 1½ to 2 mi SW.
Livermore, Sky Ranch Arpt: Greatest activity on weekends.
Lodi, Linda Arpt: Weekends. 0.5 mi NE on V23 arwy btn Linden and Sacramento VORs. Up to 9,500'.
• Los Banos Arpt: 3.5 mi SE; edge of V-113. Suns SR-SS. Up to 10,000'.
Lost Hills, Kern Co. No. 9 Arpt: Daily up to 16,000' MSL.
Milpitas, King Skyline Arpt: 8 mi E; Weekends. From 12,500'.
Ojai, Henderson Arpt: Weekends from 14,000' MSL 8 mi SW.
Ojai, Lake Castles: 1 mi NE. Up to 14,500' MSL. Weekends and holidays.
Piru: Tues-Fri. 2 mi E. Up to 14,500'.
San Diego, Brown Fld: NW corner of fld. Weekdays, morning hrs. Up to 15,000'.
San Diego-County Arpt (Gillespie Fld): Up to 20,000' MSL, chute opening alt aprxly 2700-3000' MSL in vcnty of arpt.
San Diego, Otay Reservoir: Weekdays and ngts. Up to 15,000'.
San Diego Co.: 5 mi ESE Brown Fld, adj Mexico. Weekdays and ngts. Up to 15,000'.
Santa Maria Arpt: Weekends and holidays. Up to 15,000' MSL. 6 NW.
Schellville, Sonoma Valley Arpt: Sunrise to sunset Suns.
Taft Arpt: About 6 mi E. Daily, up to 20,000'.

COLORADO

Aurora, Caltex Air Park: 2 mi W and 2 mi SE. Sat, Suns and holidays. Up to 18,500' MSL.
Colorado Springs, Bufts AAF: Weekends btn 2800 and 20,000' AGL.
Colorado Springs, USAF Academy Air Strip: Dalgth hrs Sat, Sun and holidays; week days 0500-0800 and 1600-1900. Up to 15,000' MSL.

Greeley, Weld Co Mun Arpt: Weekends 1500-0200. 4½ mi SSE from 7500' AGL.
 Littleton, Columbine Arpt: 2 mi S. Up to 13,500' AGL.
 Longmont Mun Arpt: Weekends and holidays up to 15,000'.

CONNECTICUT

Burlington, Johnnycake Arpt: Sat & Suns 1600-2200Z.
 Up to 5000' AGL.

DELAWARE

Delmar-State Line Arpt: 4 mi radius. Up to 12,500'. Weekends and holidays.
 Selbyville, American Skyways Arpt: Weekends and holidays. From 15,000'.

FLORIDA

Bachan Arpt: 7 mi S of Venice. Weekends and holidays. Up to 15,500'.
 Clewiston, Airglades Arpt: Up to 12,000'.
 Deland Mun Arpt: Up to 7,000' daily and weekends.
 Eglin AFB Aux #9 (Hurlburt Fld): Unscheduled. Up to 12,500'.
 Fort Lauderdale: 2 mi NE rdo bcn. Weekends and holidays. Up to 12,000'.
 Homestead AFB: Occasionally. Up to 1,000' MSL.
 Hovay Arpt: Weekends. Up to 10,000'.
 Kissimmee Arpt: Daily and weekends. Up to 12,000'.
 Marianna Mun Arpt: 5 mi radius; weekends during daylight hrs and intermittently daily Mon thru Fri and at ngt. Up to 12,500'.
 Palatka, Kay Larkin Arpt: Weekends.
 Sanford NAS: Sat, Sun and holidays; weekdays 1500-SS. Up to 12,500'.
 Santa Rosa Island: Daily. Up to 12,500'.
 Umatilla Arpt: 32 NM 825° rad Orlando VOR. Weekends 1700Z to 2230Z. Up to 7500'.
 Venice Arpt: 7 mi S. Weekends and holidays. Up to 15,500'.
 Zephyrhills Arpt: Sundays. Up to 12,500'.

GEORGIA

Cartersville, China Arpt: Weekends. Up to 12,500' AGL.
 Cleveland, White Co Arpt: Weekends. Up to 12,500'.
 Dawson, Terrell Co Arpt: Intermittently daily and weekends. Up to 10,000'.
 Jasper, Pickens County Arpt: Daily and weekends. Up to 6935' MSL.
 Villa Rica, Flying S Ranch: 2 mi NE. Sats and Suns. Up to 12,500' AGL.

IDAHO

Welser: 1500Z-SS. Up to 12,000. Ending last Sun in Oct.

ILLINOIS

Alledo, Mercer Co Arpt: Evening and weekends. Up to 10,000'.
 Alton, Civic Meml Arpt: Weekends, holidays and occasional weekdays. Up to 12,500'.
 Breese Arpt: ½ mi N. Up to 7,000'.
 Chicago, Hammond Arpt: Weekends. Up to 12,500'.
 Danville, Vermilion Co Arpt: Weekends. Within 1½ mi. Up to 12,500' MSL.
 Dixon, Walgren Meml Arpt: Weekends, holidays and occasional weekdays. 0900-SS. Up to 10,000'.

Hebron Arpt: Daily.
 Hillsboro: 8 mi SSE. Weekends, holidays and occasionally weekdays. Up to 12,500'.
 Kankakee, Greater Kankakee Arpt: Weekends. From 4000'.

INDIANA

Lebanon, Combs Fld: Weds and Suns, dalgt hrs. Up to 12,500'.
 Ramsey, Glen Aire Ranch Arpt: Weekends within 5 mi radius. Up to 14,500'.
 Rising Sun Arpt: Wk-ends and holidays. Within 5 mi radius. Up to 15,500'.
 Seymour, Freeman Fld: Weekends and holidays. Up to 18,000'.

IOWA

Council Bluffs Mun Arpt: 1 mi S; up to 15,000'.
 Muscatine Arpt: 10 mi radius. Evening and weekends. Up to 12,500'.

KANSAS

Emporia: 3.2 NM SW Forbes AFB. Cont Mon thru Fri. Up to 9000'.
 Fort Leavenworth Military Reservation: Weekends and holidays. Occasionally weekdays. Up to 12,500'.
 Fort Riley Military Reservation: Sky diving operations to 10,000', weekends and holidays.
 Junction City Mun Arpt: Suns 1400Z-SS. Up to 18,700'.
 Maize Arpt: Weekends and intermittently at other times. Up to 22,000'. Occasionally ngt.

KENTUCKY

Fort Knox: 8 mi SW of Godman AAF weekends and holidays, 1300-1700. Up to 10,000'.
 Greenville-Muhlenberg Co. Arpt: Suns and holidays 0700-SS. Up to 12,500'.

LOUISIANA

Baton Rouge, Ryan Arpt: 6NE. Dalgt hrs. Up to 13,000 MSL.
 De Ridder, Secoregard Parish Arpt: Sky diving from 12,000'.
 Fort Polk, Polk AAF: 2 nmi radius.
 Hammond Arpt: Intermittently. Up to 10,000'.

MAINE

Augusta State Arpt: Sundays, 8 mi SE.
 Sanford: Unscheduled jumps from 2700' to 12,500'.
 Watcoast Arpt: Weekends. Up to 12,000'.

MARYLAND

Cumberland, Mexico Farms Arpt: Up to 8000'. Most activity weekends.
 Edgewood: 35 smi on the 53° radial from Baltimore VORTAC. Weekends and evenings, occasionally weekdays. Up to 10,000'.
 Ebersburg, Robert E. Lee Arpt: 8 mi S EMI VOR. Up to 12,500' MSL. Most activity weekends.
 Elton, Lovett Arpt: Weekends. Up to 8000'.
 Mitchellville, Freeway Arpt: 4 mi E. Weekends and holidays. Up to 12,000'.
 Nottingham: 2 mi out on VOR radial 031. Weekends and Weds to 10:00 P.M. up to 20,000'.
 Patuxent River NAS: On V-213. 2200-2400 weekdays; 1500-2100Z Sat, Sun and holidays. Up to 12,500'.
 Stevensville, Carroll's Arpt: Weekends. Up to 12,500'.

MASSACHUSETTS

Agawam: Daytime only. Up to 15,000'.
Fort Devens AAF: Tues and Thurs, 0800-1030 Sat, up to 13,500' MSL, lat 42°28', long 71°42'.
Hatfield, Pilgrim Arpt: Day time only. Up to 15,000'.
Mansfield Mun Arpt: 2-3 NM W (vcnty of old Attleboro Arpt). Up to 7,000'.
Mansfield Muni Arpt: Day time only. Up to 15,000'.
Maynard: 1 mi SW within 1 mi radius of lat 42°25'N, 71°20'W. Airdrop of personnel and eqpmt conducted daily 1800Z-0200Z at Natrick Labs Annex. Up to 2500'.
Montague, Turners Falls Arpt: Day time only. Up to 15,000'.
Orange Muni Arpt: Day time only. Up to 15,000'.
Pepperell Arpt: Day time only. Up to 15,000'.
Taunton Muni Arpt: Day time only. Up to 15,000'.

MICHIGAN

E. Tawas, Iosco Arpt: Up to 13,500'.
Gregory, Richmond Fld: Weekends.
Houghton Co. Memorial Arpt: NOTAMS will be issued when activated.
Marshall, Brooks Fld: Weekends. Up to 13,000'.
Memee: 5 mi S. Weekends. Up to 15,500'.
Monkton Northside Airport: Up to 15,000'.
Saginaw Arpt: Weekends. Up to 13,000'.
Saline Arpt: 1 mi SW. 0800 to SS Sats and Suns, and holidays. Up to 18,000'.
Tecumseh Arpt: Daily. Up to 17,500'.

MINNESOTA

Aikin Men Arpt: Weekends.
Bethel: 2 mi E. Weekends. Up to 12,000'. Summer months: Wed afternoons.
Monticello, Flynn Arpt: Wk-end. Up to 12,000' AGL.
Rosemount: 3 mi SE. Up to 2500'.

MISSISSIPPI

Lucedale, Farnce Arpt: Weekends. Up to 12,000'.
Ocean Springs, Gulfport Arpt: SR-SS Sats, Suns, holidays and occasional wk days. Up to 12,500' AGL.

MISSOURI

Houston Muni Arpt: Weekends. Up to 12,000' MSL.
St. Louis, LeMaster Arpt: Weekends and holidays. Up to 11,000'.

MONTANA

Hamilton Arpt: 0.4 mi E. Weekends. Up to 11,000'.
Missoula Co Arpt: Dalt hrs. Sky divers Club altitudes to 12,000' MSL—Miller Creek Area lat 46°47' to 46°49' long 114°01' to 114°05'. U.S. Forest Service Practice Areas . . . altitudes to 1500' AGL small areas vcnty of Lavelle Creek lat 47°00' long 114°03'; Mill Creek lat 47°02' long 114°12'; Sherman Creek lat 46°54' long 114°12'; O'Brien Creek lat 46°52', long 114°08'; Hayes Creek lat 46°49' long 114°06'; Ninemille Creek lat 47°05' long 114°28'; Fournier Creek lat 47°01' long 114°11'; Miller Creek lat 46°43' long 113°54'; Wild Horse Ridge lat 46°54' long 114°19'.

NEBRASKA

Croft Muni Arpt: Weekends and holidays, sunrise to sunset. Up to 12,500' AGL.

Walton: 2.5 E. Weekends and holidays. Sunrise to sunset. Up to 12,500' AGL.

NEVADA

Carson City Arpt: 7 days a wk. Up to 12,500' MSL.
Las Vegas, Thunderbird Fld: 3.5 mi WSW 7 days a wk. Up to 12,500'.

NEW JERSEY

Blakstown Arpt: Daily excp Tues. From 13,000'.
Hemington, Adams Arpt: Dalt hrs. Weekends. Up to 25,000'.
Hightstown, Applegarth Landing Strip: Weekends. Up to 12,500'.
Lakehurst NAS-West Fld: Up to 12,000'.
Lakewood Arpt: Within 2 mi radius. Up to 12,500'.
Manville Kupper Arpt: Dalt hrs daily. Up to 25,000'.
Mt. Holly, Cameron Arpt: Weekends. Up to 12,500'.

NEW MEXICO

Albuquerque: 6 mi NE ABQ VORTAC weekend and holidays. Up to 18,000'.
Bellevue: 3 to 5 mi SE. Weekends and holidays. Up to 18,000'.

NEW YORK

East Moriches, Spadaro Arpt: Daily. Up to 12,500'.
Fulton Arpt: Within 1 mi radius. Weekends and holidays. Up to 15,000'.
Greene Arpt: Within 5 mi radius. Weekends and holidays till 1 hr after SS. Wed 1500-1 hr after SS. Up to 15,000'.
Newburgh, Stewart AFB: 9 NM NNW dalt hrs, daily. Up to 13,000' AGL.
Northville, Red Barn Arpt: 0.2NM E. 0800-2000. Up to 11,500'.
Olean Muni Arpt: 3 nmi NW. Daily. Up to 14,000' MSL.
Randolph Arpt: Daily. Up to 15,000'.
Statens Island, Miller Army Airfd: 1 mi from arpt bdry in all quads. Sats 1300-1900Z, 0100-0400Z. Up to 1500' MSL.
Stonerville Arpt: Weekends and holidays. Up to 12,000'.
Wales-Aurora Arpt: 2 mi E of Aurora. SR-½ hr past SS. Up to 13,500' MSL.

NORTH CAROLINA

Charlotte, Breckenborough Arpt: 5 mi N. Fri, Sat and Suns, beginning at 1200E. Up to 14,000'.
Erwin Arpt: Weekends.
New River MCAF: On V157 1100-0300 daily from 23,500'.
Shelby Muni Arpt: Sat and Sun. Up to 12,000'.
Wade, Gordon Fld: 2 mi radius. Day and ngt, most activity week-ends. Up to 12,500'.
Winston-Salem Reynolds Arpt: 5½ mi E. Sat and Suns. Up to 14,000' MSL.

NORTH DAKOTA

Grafton Muni Arpt: Weekends. 2 nmi radius of a point 5 nmi E of arpt. Up to 13,500'.

OHIO

Alliance, Barber Airfield: 5 mi N. Daily 1100Z-1 hr past SS. Up to 15,000'.
Circleville: 5 mi NE. Sat and Sun 1600Z to SS. Up to 12,000'.

Columbus Mun: 17 mi SW. Daily SR-SS. Up to 25,000'.
Elyria, Nimrod Arpt: 1300Z-0200Z until Nov. 30. Up to 12,500' AGL.
Fosteria, Snyder Arpt: Weekends and holidays. Intermittently during the wk. Up to 12,000' AGL.
Geneva, Germock Arpt: 0900-2100 EST Sat and Sun. Up to 12,500'.
Jefferson Arpt: Suns 1200 to 2100 EDT. Up to 12,500'.
Lenex Arpt: Sat and Sun. 0900 2100 EDST. Up to 12,500'.
Madina, Freedom Fld: 3 mi SE. Daily 1500-0300Z. Up to 15,000 MSL (June 5-Dec 4, 1965).
Orrville Arpt: 16 SW of Akron-Canton Arpt. Daily 1800-0200Z. Up to 12,500' AGL.
Piqua Arpt: Up to 12,000'. Daily.
Shady Grove Arpt: 8 mi SW Akron-Canton arpt. Daily. Up to 12,500'.
Shelby, American Tower Arpt: Weekends Sunrise-Sunset. Up to 12,500'.
South Dayton Arpt: Up to 18,000'. Daily.
Springfield Arpt: Wed, Sat and Sun. Up to 12,500'.
Waynesville Arpt: Sun. Up to 10,000'.
Williamsburg, Fisher Arpt: Weekends. Up to 20,000'.
Wilmington, Clinton Co AFB: NW corner adjt to rnwy. Up to 2800' MSL.
Xenia Arpt: Daily. Up to 20,000'.
Youngstown: 2 mi W and 1½ mi S of Parkman, Ohio. Tues, Thurs and weekends. Up to 18,000'.
Youngstown, Denman's Fld: 1500Z-SS. Up to 7000'.

OKLAHOMA

Bartlesville (H-Way Arpt): 1 mi radius. Weekends and holidays. Up to 12,500' AGL.
Oklahoma City, Richards Arpt: Weekends, holidays, occasionally weekdays. Up to 12,500' AGL.
Stread Mun Arpt: Within 5 mi radius of arpt. Up to 12,500' AGL.

OREGON

Albany: 1½ mi SE of arpt. Weekends. 1000-SS. Up to 18,000' MSL.
Astoria, Clatsop Co. Arpt: Various alts. Holidays and weekends.
Cave Junction, Ulinch Valley Airstrip: 2 mi N and 5 mi NE. Periodically June thru Sept. From 2000' AGL.
Cottage Grove: 1½ mi E of city. Wed, Thurs, Fri, Sat 1600-2030. Up to 10,000' MSL.
Eugene, Mahlen Sweet Fld: ½ mi E. Weekends, SR-SS. Up to 13,000' MSL (Sept 1 thru Apr 30).
Eugene, T-Bird Arpt: 5 mi W. Weekends SR-SS. Surface to 18,000' MSL (May 1 thru Aug 31).
Medford Arpt: 4 mi W. Light weekdays, moderate to hvy weekends and holidays. Various altitudes.
Portland: ½ mi S and 8 mi E of Scholl Arpt, Orchard, Wash.
Portland: 4 mi N Aurora Flight Strip, Aurora, Oreg.
Redmond, Roberts Fld: 10 mi E arpt & 4 mi SW Prineville Arpt. Daily. From 2,000'.
Redmond, Roberts Fld: 8 mi S. Week ends. Up to 1500' AGL.

PENNSYLVANIA

Campbelltown, Raigles Arpt: Daily. Up to 15,000'.
Hazleton Mun Arpt: 3 mi N. Weekdays 1700 to Sunset; weekends 1200 to sunset. Up to 7500' MSL.
Johnsville NAF: Within 2 mi radius. Up to 18,000'.
Meadville, Fort Meadville: Within 1.5 mi radius of fld. Weekends. Up to 12,500'.
New Hanover Arpt: Most activities weekends. Up to 12,500'.
Pittstown Arpt: Weekends. Up to 8000'.
Reading, Gen. Spaatz Arpt: Weekends. Up to 10,000'.
Williamsport-Lycoming Co. Arpt: 4 mi S. Weekdays 1700-SS; weekends 0900-SS. Up to 12,000' MSL.

RHODE ISLAND

Greene Ricann Arpt: Daily. Up to 11,000'.

SOUTH CAROLINA

Fairfax, Padgett Arpt: Weekends and Holidays. Up to 12,500'.
Lane Arpt: Low level navigation and parachute drops every day and night, 300' to 1000'.
Monda Corner Mun Arpt: Weekends. Up to 10,000'.
Orangeburg Mun Arpt: Weekends and holidays. Up to 12,500'.
Spartan Arpt: Daily 1500Z to sunset. From 7,200', Sat, Sun, holidays. Up to 10,000'.
Timmerville, Huggins Arpt: Sat, Sun and holidays. From 10,000'.
Walterboro Mun Arpt: Weekends. From 10,000'.

TENNESSEE

Athens, McMinn County Arpt: 6 mi W. Up to 12,500'.
Chattanooga, Lovell Fld: 16 mi ESE. Continuously. Up to 10,000'.
Cleveland, Hardwick Fld: 5 mi NE 0600 to 1900 EST 7 days per wk. Up to 12,500'.
Columbia, Hunter Arpt: Noon-SS. Wed, Weekends and holidays. Up to 18,000'.
Nashville, Cornelia Fort Airpark: Weds, weekends and holidays. Up to 7500'.
Nashville, Cumberland Fld: 6 mi NW. Irregular schedule. Ctc BNA FSS for details.
Tri-City Arpt: 20 mi SSW at Decker Farm Arpt Irregular schedule. Up to 7,000'.

TEXAS

Ablene Dyess AFB: ½ mi W of rnwy. Up to 8900' MSL.
Amarillo, Palo Duro Arpt: 2 mi radius. Wk ends and holidays SR to SS. Up to 16,000' MSL.
Cedar Hills Airfield: 18.5 NM due E of Dallas VOR. 0200Z thru 0500Z and 1900Z thru 2300Z Sats and Suns. Up to 2040' MSL.
Elington AFB: 5 mi S on 850°M. Up to 1500' MSL.
El Paso: 6 nmi NW Biggs AFB. Up to 17,500' MSL.
Garland, Colerway Arpt: Weekends. Up to 10,000'.
Houston, Crosby Arpt: 2 mi W and 8 mi W. Weekend and occasional wk days. Up to 20,000'.
Lampasas Arpt: Weekends. Up to 14,000' MSL.
Laredo Mun Arpt: 3 mi radius. Up to 14,000' MSL.
Mercedes, Rebel Fld: 2 mi rad. Weekends. Up to 12,500'.

Midland: 8 mi N of Ector Co. Arpt, Odessa, Tex. Week-ends and holidays, occasionally weekdays. Up to 15,000' MSL.

San Marcos, Camp Gary AAF: Weekends and holidays. Up to 14,500'.

Taylor Mun Arpt: Weekends.

UTAH

Beauregard, Sky Haven Arpt: Daily. Up to 13,500' MSL.

Hill AFB: Two times per mo. during daylight hrs and two times per year during night time, 1200' W of runway 14-32. Up to 6000' MSL.

Opden Arpt: Up to 12,000' MSL. Daily.

Sandy, Alta Air Park: Daily. Up to 14,000' MSL.

Wendover AF Aux Fld: Day and night, unscheduled. Up to 5800' MSL.

VERMONT

Bristol Arpt: 7/8 mi NW. Weekends. SR to SS. Up to 7500'.

Swanton, Austin Arpt: Weekends. Up to 6000'.

VIRGINIA

Blackstone AAF: Daily. Up to 25,000'. Occasional sky diving.

Forest, New London Arpt: Daily. Up to 11,000'.

Hopewell Arpt: Weekends. Up to 8000'.

Leesburg: 2 nmi N or 10 nmi Herndon VOR on 340° radial. Weekends. Up to 12,500'. Occasional night jump.

Manassas: On the Herndon 185 radial 15 mi. Weekends and holidays. Occasional night jumping. Up to 12,500'.

Midland: 8 nmi from CSN VOR on 120° rad. Weekends. Up to 12,000'.

New Castle Intl Arpt: Weekends and holiday. Up to 14,000'.

Ocean NAS: Daylight hrs. 2000-2400Z daily; 1500-2300Z Sat, Sun & holidays. Up to 12,000'.

Potomac, New River Valley Arpt: Weekends, holidays, and evening. Up to 18,000'.

Quinton, New Kent Arpt: 1 mi W, 5 mi radius. Weekends SR-SS. Up to 20,000'.

South Boston, Tuck Arpt: Within 3 mi radius. Sun 1200 to 1800 EST. Up to 10,000'.

South Norfolk Arpt: Within 5 mi radius. Weekends and evenings. Up to 18,000'.

Suffolk Mun Arpt: Weekends and holidays. Up to 12,000'.

Waynesboro Arpt: Weekends 1800Z-SS. Up to 10,000'.

West Point Arpt: Weekends and holidays. Up to 12,000'.

WASHINGTON

Colville Arpt: Week-ends, holidays, occasionally week-day evenings. Up to 14,000' MSL.

Enumclaw Arpt: Weekends and holidays. Up to 15,000'.

Issaquah-Sky Ranch Arpt: Wed, Fri and weekends. Up to 7000'.

Larson AFB: 1/2 mi from end of runway 21. Daily. Up to 2500' AGL.

McChord AFB: 8 mi S of arpt. 1 1/2 mi SE of TCM rbn. Week ends and occasional night. Up to 1500' AGL.

Moses Lake Mun Arpt: 1.5 mi NE. Daily up to 10,000'.

Oak Harbor, Whidbey Island NAS: Weekends. Up to 12,500' MSL.

Puyallup, Thun Fld: Tues, Thurs and weekends. Up to 12,000'.

Richland Arpt: 3 mi W SR to 1 hr after SS. Up to 12,500' AGL.

Snohomish Arpt: Daily. Up to 24,000' MSL. Occasionally 1 mi SW.

WEST VIRGINIA

Morgantown Arpt: 3 NM SSW. Days.

WISCONSIN

Lake Geneva Wal-Co-Wis Farms Arpt: SR—one hr after SS Wed, Thurs, Sat and Sun. Up to 15,000'.

New Holstein Arpt: Weekends, SR-SS. Sat and Sun. Up to 12,500'.

Superior Arpt: 5 mi SE weekends SR-SS. Up to 12,500'.

Stevens Point Mun Arpt: 2 mi NW. Daily. Up to 12,500'.

Menomonee Falls, Aero Park Arpt: 2200-SS Mon thru Fri. Up to 12,500' MSL.

Waupun Arpt: Sats, Suns, holidays. Up to 12,000'.

PREFERRED ROUTES

A system of preferred routes has been established to guide pilots in planning their route of flight, to minimize route changes during the operational phase of flight, and to aid in the efficient orderly management of the air traffic using federal airways. The preferred routings which follow are designed to serve the needs of airspace users and to provide for a systematic flow of air traffic in the major terminal and en route flight environments. Cooperation by all pilots in filing preferred routes will result in fewer traffic delays and will better provide for efficient departure, en route and arrival air traffic control service.

This list contains preferred routes for the low altitude stratum (below 18,000 feet MSL).

Low Altitude Stratum—A distinctive numbering system (800 Series) has been introduced to indicate some of the preferred routes in this stratum and thereby eliminate the present lengthy route descriptions. Many of the preferred routes, however, retain the common basic airway numbers or use the two systems of numbering in combination. Additional designations of "800 Series Airways" will be made where simplicity and convenience to both pilots and controllers dictate such assignments.

(L20, Z3)=Enroute chart numbers.

ALBANY

Boston..... V2 GDM (L-25)
Kennedy..... V91 V475 DPK (L-25)
LaGuardia..... V91 V497 ~~Standard~~ (L25)
Newark..... V489 ~~Budd Lake~~ (L25)

ALBUQUERQUE

Denver..... ADEN V19W SAF V83 PUB V19E IOC (L-4, 6)
Kansas City..... ~~Adan~~ V19W SAF V19 LVS V190 DHT V234 V280
Farley (L-6)
Los Angeles..... GNT V12 EED V208 TNP V264S ONT. (L-4, 3)
Phoenix..... GNT V190N SJN V190 Lake. (L-4)

ATLANTA METRO AREA

Birmingham..... ~~Newman~~ V20N V66 V115 Lewis (L-20, 14)
Cincinnati..... Crabapple V97 Dry Ridge (L-20, 22)
Charlotte..... Conyers V66 FML (L-20)
Chicago..... Crabapple V51 CBT (L-14, 20, 21, 23)
Dallas..... ~~Newman~~ V20N V66 TCL V18 MLU V94 V477E Farney
(L-20, L-14, L-18, L-17, L-13)
Dulles..... Conyers V66 FML V454 LVL V155 GVE V39E Brandy
(L20-22)
Houston..... ~~Newman~~ V20N V66 TCL V18 MEI V194 MCB
V222 LCH V222N ~~Monument~~ (L-20, L-14, L-18,
L-17, L-15)
Kennedy..... Conyers V66 FML V454 LVL V157 RIC V20 V213 V44
(L-20, 22, 24)
Jacksonville..... Griffin V243 AYS V243W Callahan (L20, 18)

Preferred Route Starting and Terminating Fixes—Preferred routes generally commence and terminate at fixes on or near the perimeter of the terminal area.

Depicted on the Area Charts, produced by Coast and Geodetic Survey, are the normal routes between the airport and the preferred route starting/terminating fixes. Whenever a fix is shown in **bold-face** type, pilots should refer to the appropriate Area Chart for the routing he may expect prior to or after that fix as appropriate.

Preferred routes beginning/ending with an airway number indicate that the airway essentially overlies the airport and flights are normally cleared directly on the airway. All preferred routes are listed alphabetically under the name of the departure airport. Major airports in close proximity are listed under the principal airport and categorized as a metropolitan area; e.g., Chicago Metro Area. Official location identifiers are used in the route description for VOR/VORTAC navaids. L/MF navaids are identified by the identifier and type: e.g., MIV/LFR, DOV/Rbn. Intersection names are spelled out. Where two navaids or an intersection and a navaid follow in succession, the route is direct.

La Guardia..... Conyers V66 FML V454 LVL V157 RIC V20 V213
JFK (L-20, 22, 24)
Memphis..... ~~Newman~~ V20N V66 V115 BHM V176N HLI (L-20, 14)
Miami..... Brooks V843 MIA (L-20, 18, 19)
Newark..... Conyers V66 FML V454 V157 V20 V213 V29 V433
Rocky Hill (L-20, 22, 24)
Orlando..... Griffin V243 AYS V157 OCF V159W ~~Clarendon~~ (L20,
18, 19)
Pittsburgh..... Crabapple V97 TYS V115 PKB V119 HLG (L-20,
22, 24)
Tampa..... Brooks V843 HOMO V35E ~~Hazel~~ (L-20, 18, 19)
Washington..... Conyers V66 FML V454 LVL V157 ~~Ironides~~ (20, 22)

BALTIMORE—See Washington/Baltimore Metro

BIRMINGHAM

Atlanta..... ANB V18 ~~Sargent~~ (L-14, 20)
New Orleans..... TCL V875 ~~Madison~~ (L-14, 18, 17)
Pittsburgh..... GAD V115E CHA V115 PKB V119 HLG (L-14, 22, 24)

BOSTON METRO AREA

Albany..... V14 Metrose (L-25)
Buffalo..... V14 Bellona V31 ROC V142 ~~Grant~~ (L-25)
Cleveland..... V14 ALB V72 Hadley V232 ~~Monter~~ (L-25, L-24)
Kennedy..... PUT V879 DPK (L-25)

BOSTON METRO AREA—Continued

LaGuardia..... **Milbury** V875 V445 **Standard** (L25)
 Newark..... **Milbury** V875 V292 **Budd Lake** (L25-L24)
 Philadelphia..... **Milbury** V875 **Warrington** (L-25, 24)
 Rochester..... V14 **Bellona** V31 **Fishers** (L-25)
 Washington..... **PUT** V888 **North Beach** (L-25, 24)
 Windsor Locks..... **PUT** **PUT** 295 **rad Meadow**, (L25)

BUFFALO

Boston..... **GEE** V14 **GDM** (L-12, L-25)
 Cleveland..... **Langford** V464 **DKK** V14 **Monitor** (L-12, 24)
 Detroit..... V2 **QO** V90N **Dolphin** V90 **QO** (L-12, 23)
 Kennedy..... V252 **BGM** V270 V34 V475 **DPK** (L-12, 25)
 La Guardia..... V252 **GEE** V147 **ABE** V6 V433 **Liberty** (L-12, 25)
 Midway..... V84 **LAN** V218 **Burl** (L-12, 23)
 Newark..... V252 **GEE** V147 **TOH** V226 **Budd Lake** (L12-25)
 O'Hare..... V84 **ODK** (L12, 23)
 Philadelphia..... V33 **PSB** V238 **EDR** (L-12, 24)
 Pittsburgh..... V115 **EWG** (L-12, 24)
 Washington..... V33 **HAR** V265 **Dayton** **GTN/Rbn** **DCA** (L12-24)

CHARLESTON, W. VA.

Cincinnati..... V128 **YRK** V128S **Grants Link** (L-22)
 Cleveland..... V115 **PKB** V839 **Sharon** L-22, 24, 23)
 Columbus..... V133 V214 **Hanover** (L-22, 23)
 Louisville..... V128 **YRK** V44 **FLM** V502 (L-22, 21)
 Pittsburgh..... V115 **PKB** V119 **HLG** (L-22, 24)
 Washington..... V4S **EKN** V4 **HRN** (L22, 24)

CHARLOTTE

Atlanta..... **FML** V194 **Homer** V20N **OCR** (L20)
 Cleveland..... **Moorseville** V37 **PSK** V839 **Sharon** (L-20, 22, 24)
 Kennedy..... **New London** V454 **LVL** V157 **RIC** V20 V213 V44 **BGT**
 (L-20, 22, 24)
 La Guardia..... **New London** V454 **LVL** V157 V20 V213 **JFK** (L-20,
 22, 24)
 Miami..... **FML** V37 **ALD** V157 **LAL** V843 **Cypress** (L-20, 18, 19)
 Washington..... **New London** V454 **LVL** V157 **Ipswich** (L-20, 22)

CHICAGO METRO AREA

From Midway or O'Hare

Atlanta..... **EON** V843 **Kennesaw** (L-23, 21, 14, 20)
 Denver..... **Malta** V846 (L-23, 6, 8)
 Detroit City..... V100 V218 **Troy** (L23)
 Dulles..... **EON** V853 **ESL** V144 **Blue Ridge** (L23-22)
 Kennedy..... V6 **SEG** V810 **RBV** (L-23, 24)
 Indianapolis..... **EON** V128 (L-23)
 La Guardia..... V6 V433 **Liberty** (L-23, 24)
 Los Angeles..... **Malta** V846 **DEN** V8 (L-23, 6, 8, 3)
 Memphis..... **Big Ram** V173 **CAP** V9 **Kerrville** (L-23, 21, 14)
 Miami..... **EON** V843 (L-23, 21, 14, 18, 19)
 • Minneapolis..... V855 **FBT** or V172 V129 **UKN** V855 **EGT**
 (L23-11-10)
 Newark..... V6 **SEG** V30 **Rosky Hill** (L-23, 24)
 Philadelphia..... V6 V30 **PSB** V238 **EDR** (L-23, 24)
 Pittsburgh..... V6 V103 **ACO** V297 **EWG** (L-23)
 San Francisco..... **Malta** V854 (L-23, 11, 8, 7, 2)
 St. Louis..... **Big Ram** V191 V426 **Godfrey** (L-23, 21)

Tampa..... V843 **Home** V35E **Hazel** (L-23, 21, 14, 20, 18, 19)
 Tulsa..... V845 **EOS** V14 (L-23, 6, 14)
 Washington..... **EON** V853 **HRN** (L-23, 22)
From Midway only
 Cleveland..... **Grb** V6 V232 **Vermilion** (L-23)
 Des Moines..... **API** V8 **CVA** V233 **CID** V846 **TNU** (L-23, 11)
 Kansas City..... **API** V10 **Kearney** (L-23, 11, 21)
 Metro Wayne Co... V10 **Dundee** (L-23)
 Omaha..... **API** V8 **CVA** V233 **CID** V846 **EOL** (L-23, 11)
 Willow Run..... **Grb** V10 **LFD** V90 (L-23)
From O'Hare only
 Cleveland..... V172 V228 **SDN** V6 V232 **Vermilion** (L-23)
 Des Moines..... V172 **TNU** (L-23, 11)
 Kansas City..... V84 **BDF** V10 **Kearney** (L-23, 11, 21)
 Metro Wayne Co... V100 **Leroy** V30 **LFD** V10 **Dundee** (L-23)
 Omaha..... V172 **PLL** V846 **EOL** (L-23, 11)
 Willow Run..... V100 V30 V90 (L-23)
 Windsor..... V100 V218 **Troy** (L23)

CINCINNATI METRO AREA

Atlanta..... V97 **TYS** V267 **OCR** (L-21, 22, 20)
 Charleston, W. Va. V128 (L-21, 22, 20)
 Chicago..... V97 **CGT** (L-21, 23)
 Detroit (City)..... V275 **VWV** V47 **BVM** (L-21, 23)
 Indianapolis..... V97 (L-21, 23)
 La Guardia..... V128 **YRK** V44 **MGW** V106 **SEG** V6 V433 **Liberty**
 (L-22, 24)
 Louisville..... V47 **ABB** V51 (L-21)
 Metro Wayne Co... V275 **VWV** V47 **Dundee** (L-21, 23)
 Miami..... V47 **ABB** V51 **CSV** V51W **CHA** V843 **Cypress**, or V97
ATL V843 **Cypress** (L-21, 22, 20, 18, 19)
 Newark..... V128 **YRK** V44 **MGW** V106 V30 **Rosky Hill** (L-22, 24)
 Pittsburgh..... V128 **YRK** V44 **PKB** V119 **HLG** (L-22, 24)
 St. Louis..... V47 **ABB** V44 **ENL** V4 **TOY** (L-21)
 Willow Run..... V275 **VWV** V47 **Dundee** (L21, 23)

CLEVELAND METRO AREA

Boston..... V14N **ERI** V270 **BGM** V72 **ALB** V2 **GDM** (L-23, 24,
 12, 25)
 Buffalo..... V14N **Crystal Beach** (L-23, 24, 12)
 Charlotte..... V443 **TVT** V133 **Stanley** (L-23, 22, 20)
 Chicago..... V126 **CGT** V7 **Millie** (L-23)
 Columbus..... V443 **TVT** V43 **APE** (L-23)
 Dayton..... V14 **ATO** V435 **ROD** (L-23)
 Detroit (City)..... V42E **QG** V90 (L-23)
 Kennedy..... **ACO** V30 **SEG** V810 **RBV** (L-24)
 Indianapolis..... **CLE** V14 (L23)
 La Guardia..... **ACO** V30 **CIP** V6 **Amboy** V433 **Liberty** (L-24)
 Metro Wayne Co... V42E V10 **CRL** (L-23)
 Miami..... V881 **Cypress** (L-22, 20, 18, 19)
 Newark..... **ACO** V30 **Rosky Hill** (L-24)
 Philadelphia..... **ACO** V30 **PSB** V238 **EDR** (L-24)
 Pittsburgh..... **ACO** V297 **EWG** (L-24)
 Rochester..... V14N **ERI** V14 **BUF** V2 **Chilton** (L-23, 24, 12)
 Washington..... **ACO** V103 **IRL** V37 **Millsboro** V92 **FRR** V4 **HRN**
 (L-24)
 Willow Run..... V42E **QG** V90 (L-23)

COLUMBUS

Charleston, W. Va. APE V38 V133 (L-23, 24, 22)
 Indianapolis..... Grindell V210 (L-23)
 La Guardia..... APE V802 V6 V433 Liberty (L-23, 24)
 Pittsburgh..... APE V12 HLB (L-23, 24)
 St. Louis..... V12N V210 VLA V14N Godfrey (L-23, 21)
 Toledo..... V38 FDY V47 (L-23)
 Washington..... APE V144 ESL V4 HRN (L-23, 24)

DALLAS/FT. WORTH METRO AREA

Amarillo..... Lakeland V114 Claude (L-13)
 Atlanta..... DAL V278 BHM V18 Sargent (L-13, L-14, L-20)
 Dulles..... V830 MOL V251 V174 Blue Ridge (L13-14-21-22)
 El Paso..... Jackson V94 INK V16 RIO (L-13, 4)
 Houston..... Trinity Fork V477 LOA V477W Fairbanks (L-13, 17)
 Los Angeles..... Jackson V94 INK V16 SFL V94 GBN V461 BXX V16
 ONT (L-13, 4, 3)
 Memphis..... DAL V830 PBF V16N Round Pond (L-13, 14)
 Midway..... DAL V15 Gunter PNK MLC V63 UIN V116 JOT
 (L-13, 6, 21, 11, 23)
 New Orleans..... DAL V114 French (L-13, 17)
 O'Hare..... DAL V15 Gunter PNK MLC V63 UIN V116 JOT
 (L-13, 6, 21, 11, 23)
 San Antonio..... Red Oak V15E ACT V17 AUS V17W Bargheim (L-13,
 15)
 Tulsa..... DAL V15 Gunter PNK MLC V131 OKM Haskell; or
 DAL V15 OKM Haskell (L-13, 6)
 Washington..... DAL V830 Iremides (L-13, 14, 21, 22)

DAYTON

Chicago..... DAY 001 Radial V277 FWA V55 V422 COT (L-23)
 Cleveland..... V275 FDY V8 MFD V246 Sharon (L-23)
 Detroit (City)..... V275 FDY V47 SVM (L-23)
 La Guardia..... V802 V6 V433 Liberty (L-23, 24)
 Metro Wayne Co./
 Willow Run..... V275 FDY V47 Dundee (L-23)
 Oklahoma City..... DAY V50N IND V210 STL V14 TUL V14N Langston
 (L23-21-6)
 Washington..... V12 APE V144 ESL V4 HRN(L-23, 24)

DENVER METRO AREA

Chicago..... DEN V172 Holyoke V8N HCT V8 IOW V38 JOT (L-8,
 11, 23)
 Kennedy..... DEN V172 Holyoke V8N HCT V8 IOW V38 JOT V92
 VWV V6 V30 ETX RBV (L-8, 11, 23, 24)

DETROIT METRO AREA

Kennedy..... V221 ERI V810 RBV (L-12, 24)
From City and Windsor only
 Newark..... V221 ERI V810 SEG V30 Rocky Hill (L-12, 23, 24,
 28, 25)
 Philadelphia..... V221 ERI V116 BFD V33 HAR V238 EBR (L-12, 24)
 Ft. Wayne..... SVM V170 Leslie V45 JXN V221 (L-23)
 Midway..... SVM V170 V84 V7E V116 (L-23)
 Milwaukee..... SVM V170 PMM V30S Pike (L-12, 23)
 O'Hare..... SVM V170 V84 OSK (L-23)

From Metro or Willow Run only

Buffalo..... VZ21 V90 V14N Crystal Beach (L-12)
 Cleveland..... Grant V297 Vermilion (L-23)
 Ft. Wayne..... Darter VZ21 (L-23)
 Midway..... Plankney V170 V84 V7E V116 (L-12, 23)
 Milwaukee..... Darter V116 JXN V45 Leslie V170 PMM V30S Pike
 (L-12, 23)
 O'Hare..... Plankney V170 V84 OSK (L-12, 23)
 Pittsburgh..... Grant V133 BAY V6 V42 ACO V297 EWB (L-23,24)
 Rochester..... VZ21 V90 V14 V2 (L-12)
 Washington..... Grant V133 ZZV V144 ESL V4 HRN (L-23, 24)

EL PASO

Dallas..... HUP V66 MAF V16S BGS V16 ABI V66 Denton
 V114 Lakeland (L-4, 13)
 Los Angeles..... EWM V94 GBN V461 BXX V16 ONT (L-4, 3)
 San Antonio..... HUP V198 Bearn (L-4, 15)

HAVANA

Miami..... Balboa drct MTH drct Sable B19 PRR (L-19)

HOUSTON METRO AREA

Atlanta..... LaPorte V20S LCH V20 LFT V70 EVR V20 Tyrone
 (L-17, 18, 14, 20)
 Dallas..... Gulf Coast V477E Farney (L-17, 13)
 New Orleans..... LaPorte V20S LCH V20 Turtle (L-17)
 San Antonio..... Andrus V222 Hunter (L-17, 15)

INDIANAPOLIS

Detroit..... V11 SVM (L-23)
 Evansville..... V11W SCJ V11E (L-21)
 Kennedy..... V50 DAY V12 V162 V810 RBV (L-23, 24)
 La Guardia..... V50 DAY V802 V6 V433 Liberty (L-23, 24)
 Metro Wayne Co... V11 V10 Dundee (L-23)
 Midway..... V97W V97 COT (L-23)
 Newark..... V50 DAY V802 V30 Rocky Hill (L-23, 24)
 Pittsburgh..... V50 DAY V12 HLB (L-23, 24)
 St. Louis..... V14 VLA V14N Godfrey (L-21)
 Willow Run..... V11 V10 Dundee (L-23)

JACKSONVILLE

Atlanta..... Kings V5E DBN V5 MIDU (L18, 20)
 Dulles..... Clinch V3E SAV V3 RDU V155 GVE V39E Brandy
 (L18-20-22)
 Kennedy..... Clinch V3E SAV V3 RDU V155 LVL V157 RIC V20
 V213 ENO V44 COT (L-18, 20, 22, 24)
 LaGuardia..... Clinch V3E SAV V3 RDU V155 LVL V157 RIC V20
 Tappahannock V213 JFK (L-18, 20, 22, 24)
 Miami..... Blue Jacket V267 New River (L-19)
 Newark..... Clinch V3E SAV V3 RDU V155 LVL V157 RIC V20
 V213 V29 V433 Rocky Hill (L-18, 20, 22, 24)
 Norfolk..... Clinch V3E SAV V437 CHS VI MYR V213 RMT
 V189 FKN V266 Burdette (L18-20-22)
 Orlando..... Blue Jacket V267 Woodruff (L-18, 19)
 Philadelphia..... Clinch V3E SAV V3 RDU V155 LVL V157 RIC V20
 V213 OOD (L-18, 20, 22, 24)
 Washington..... Clinch V3E SAV V3 RDU V155 LVL V157 Iremides
 (L-18, 20, 22)

KANSAS CITY METRO AREA

Midway..... **Excelsior** V116 JOT (L-21, 23)
 O'Hare..... **Excelsior** V116 JOT (L-21, 23)
 St. Louis..... **BSP** V12 MTS (L-21)
 Wichita..... **Bonair Springs** V12 De Graff (L-6)

KENNEDY—See New York Metro Area

LA GUARDIA—See New York Metro Area

LOUISVILLE

La Guardia..... V4 CRW V106 SEG V6 V433 **Liberty** (L-21, 22, 24)
 Newark..... V4 CRW V106 V30 **Rocky Hill Hill** (L-21, 22, 24)

MEMPHIS

Atlanta..... HLI V176 BHM V18 **Sargent** (L-14, L-20)
 Dallas..... Eudora V16S PBF V887 **DAL** (L-14, 13)
 Dulles..... Moscow V16S GHM V830 V251 V174 **Blue Ridge**
 (L14-21-22)
 Midway..... Cuba V9W V9 JOT (L-14, 21, 22)
 New Orleans..... Arkabutla V9W GRW V9 **Madison** (L-14, 17)
 O'Hare..... Cuba V9W V9 JOT (L-14, 21, 23)
 Washington..... MOSCOW V16S GHM V830 **Ironclad** (L-14,
 22)

METRO WAYNE CO—See Detroit Metro Area

MIAMI METRO AREA

Atlanta..... MIA V35 V7 LAL V157 AMG V5 **MDU** (L-19, L-18,
 L-20)
 Charlotte..... MIA V35 V7 LAL V157 ALD V37 FML L-19, 18, 20)
 Chicago..... MIA V35 FMY V819 DBN V267 TYS V97 **COT** (L-19,
 20, 22, 21, 23)
 Cleveland..... MIA V839 (L-19, 20, 22, 21, 23)
 Detroit (City)..... V839 CLE V42 **QG** (L-19, 20, 22, 21, 23)
 Dulles..... Guppy DRCT Halibut Control 1150 ILM V157 LVL
 V155 GVE V39E **Brandy** (L19-20-22)
 Habana..... Gary V51 EYW drct SF/Rbn; or PRR/Rbn drct Leon
 drct EYW drct SF/Rbn (L-19)
 Kennedy..... Guppy drct Halibut Control 1150 ILM V1 **BGT** (L-19,
 20, 22, 24)
 Jacksonville..... Martin V3E PBI V3 DAB V3E **Shiloh** (L-19)
 La Guardia..... Guppy drct Halibut Control 1150 ILM VIW V213
 JFK (—19, 20, 22, 24)
 Metro Wayne Co... V839 CLE V42 V10 **CRL** (L-19, 20, 22, 24, 23)
 Newark..... Guppy drct Halibut Control 1150 ILM V1 V29 V433
Rocky Hill (L-19, 20, 22, 24)
 Pittsburgh..... MIA V35 V7 LAL V157 ALD V37 **AGC** (L-19, 20, 22,
 24)
 Tampa..... MIA V35 **Hansen** (L-19)
 Washington..... Guppy drct Halibut Control 1150 ILM V157 **Ironclad**
 (L-19, 20, 22)
 Willow Run..... V839 CLE V42 **QG** (L-19, 20, 22, 24, 23)

MIDWAY—See Chicago Metro Area

MILWAUKEE

Chicago..... V9 API; or Taylor V7E V116 **Surf** (L-12, 23)
 Detroit..... V2S MKG V2 **SVM** (L-12)
 Kennedy..... V2S MKG V2 SVM V116 V810 SEG V30 ETX **RBV**
 (L12-L23-L24)

MINNEAPOLIS METRO AREA

Midway..... **Prosser** V2 V97 V171 V6 API (L-10, 11, 23)
 O'Hare..... **Prosser** V2 V97 **Lakewood** (L-10, 11, 23)

MONTGOMERY

Washington..... **TGE** V154 MCN V56 AGS V155 V157 **Ironclad**; or
Martin V837 **Ironclad** (L-10, 20, 22)

NASHVILLE

La Guardia..... **Freedom** V140N LOZ V830 GVE V837 ENO V213
JFK (L-21, 22, 24)
 Newark..... **Freedom** V140N LOZ V830 GVE V837 ENO V29 V433
Rocky Hill (L-21, 22, 24)

NEW ORLEANS METRO AREA

Atlanta..... PCU V837 **Tyrone** (L-17, 18, 20)
 Birmingham..... PCU V455 MEI V154 V209 BWA drct BHM/LOM
 (L-17, L-18, L-14)
 Dallas..... Walker V-114N AEX V-114 GGG V-94 V-477E
Farmy (L-17, 13)
 Dulles..... PCU V837 GVE V39E **Brandy** (L17-18-20-22)
 Houston..... TBD V20S LFT V20 LCH V222N **Monument** (L-17)
 Kennedy..... PCU V837 SBV V20 V213 ENO V44 **BGT** (L-17, 18,
 20, 22, 24)
 Memphis..... PCU V9E MCB V9 GRW V9E **Independence** (L-14)
 Newark..... PCU V837 SBV V20 V213 ENO V29 V433 **Rocky Hill**
 (L-17, 18, 20, 22, 24)
 Washington..... PCU V837 **Ironclad** (L-17, 18, 20, 22)

NEW YORK METRO AREA

From Kennedy and La Guardia only

Albany..... **Sound** POU V487 **Brainard** (L-25)
 Bradley..... **Sound** V433 **Waterbury** (L25)

From Newark only

Albany..... **SAX** POU V487 **Brainard** (L-25)
 Atlanta..... **SLJ** V875 MOL V143 V222 V35 V20N **OCR** (L-24,
 22, 20)
 Baltimore..... **SLJ** V875 V93 (L-24)
 Boston..... **SAX** POU V861 **Sterling** (L-25)
 Bradley..... **SAX** IGN IGN 103 rad **Waterbury** (L-25)
 Buffalo..... **TVE** V188 V147 V36 **Dale** (L-25)
 Cincinnati..... **SLJ** V875 V166 V4 V174 V128S **Grants Link** (L-24,
 22)
 Cleveland..... **TVE** V232 **Master** (L-24, 23)
 Detroit (City)..... **TVE** V188 V103 **QG** (L-24, 23)
 Detroit Metro Area **SAX** V880 V116 **QG** (L-24, 23)
 Dulles Intl..... **SLJ** V875 EMI V166 V223 **Sugar Land** (L-24)
 Indianapolis..... **TVE** V232 V804 (L-24, 23)
 Jacksonville..... **SLJ** V875 V29 SBY VI V437 SAV V3 **St. Marys**
 (L-24, 22, 20, 18)
 Louisville..... **SLJ** V875 V166 V4 V174 V44 FLM V502 (L-24, 22, 21)
 Metro Wayne Co... **TVE** V188 **CRL** (L-24, 23)
 Miami..... **SLJ** V3 V29 SBY VI Control 1150 **Sturgeon** drct
Tarpon drct PBI V159E **Oakland** (L-24, 22, 20, 19)
 Nashville..... **SLJ** V875 MOL V887 **Lakewood** (L-24, L-22, L-14)
 New Orleans..... **SLJ** V875 **Madison** (L-24, 22, 20, 14, 18)
 Norfolk Metro Area **SLJ** V875 V29 SBY VI CCV (L-24, 22)

NEW YORK METRO AREA—Continued**From Newark only**

Philadelphia..... **SBJ** V875 Warrington (L-24)
 Pittsburgh..... **TVE** V232 ETG V226 **EWG** (L-24)
 Providence..... **SAX** POU V861 V130 Lafayette (L-25)
 Rochester..... **SAX** V807 Fishers (L-25)
 Syracuse..... **SAX** V483 (L-25)
 Toledo..... **TVE** V232 Mentor V126 (L-24, 23)
 Washington..... **SBJ** V875 ESR V140 Dayton GTN Rbn **DCA** (L24)
 Willow Run..... **TVE** V188 V103 **QG** (L-24, 23)

From Kennedy only

Atlanta..... **Dutch** V888 V213 V20 SPA V20N **OCR** (L-24, 22, 20)
 Baltimore..... **Dutch** V888 V44 (L-24)
 Boston..... **HTO** V837 **HTM** (L-25)
 Buffalo..... **HUO** V126 V36 **Dale** (L-25)
 Cleveland..... **HUO** V126 V58 V226 V232 **Mentor** (L-25, 24, 23)
 Detroit (City)..... **HUO** V126 V880 V116 **QG** (L-25, 24, 23)
 Dulles..... **HUO** TVE V39 V162 HAR V223 **Sugar Leaf** (L-25, 24)
 Europe..... **HTO** V46 (L-25)
 Jacksonville..... **Dutch** V139 V1 V437 V3 **St. Marys** (L-24, 22, 20, 19)
 Louisville..... **HUO** TVE V39 V251 V166 V4 V174 V44 **FLM** V502 (L-25, 24, 22, 21)
 Metro Wayne Co... **HUO** V126 BFD V72 V188 **CRL** (L25, 24, 23)
 Miami..... **Dutch** V139 V1 Control 1150 Sturgeon drct Tarpon drct PBI V159E **Oakland** (L-24, 22, 20, 19)
 Montreal..... **Sound** POU V487 (L-25, 26)
 New Orleans..... **Dutch** V888 V16 ROA V875 **Madison** (L-24, 22, 20, 14, 18, 17)
 Norfolk Metro Area. **Dutch** V139 **CCV** (L-24, 22)
 O'Hare..... **HUO** V126 AVP V880 **OSK** (L-25, 24, 23)
 Philadelphia..... **Dutch** CYN V16 V239 **ODD** (L24)
 Pittsburgh..... **HUO** V126 AVP V58 V226 **EWG** (L-25, 24)
 Providence..... **HTO** V837 (L-25)
 Rochester..... **HUO** V249 V34 Fishers (L-25)
 Syracuse..... **HUO** V483 (L25)
 Toronto..... **HUO** V126 AVP V36 (L-25, 12)
 Washington..... **Dutch** V888 **North Beach** (L-24)
 Willow Run..... **HUO** V126 BFD V72 V188 V103 **QG** (L25, 24, 23)

From LaGuardia only

Atlanta..... **Peteron** V875 MOL V143 V222 V35 V20N **OCR** (L-24, 22, 20)
 Baltimore..... **Peteron** V875 V93 (L-24)
 Boston..... **Sound** V863 (L-25)
 Buffalo..... **SAX** V36 **Dale** (L-25, 12)
 Cincinnati..... **Peteron** V875 V166 V4 V174 V128S **Grants Link** (L-24, 22)
 Cleveland..... **SAX** TOH V188 JFN V14 **Mentor** (L-24, 23)
 Columbus..... **SAX** TOH V804 V119 V214 Hanover (L-24, 23)
 Detroit City..... **SAX** V880 V116 **QG** (L24, 23)
 Dulles Intl..... **Peteron** V875 EMI V166 V223 **Sugar Leaf** (L-24)
 Indianapolis..... **SAX** TOH V804 (L-24, 23)
 Louisville..... **Peteron** V875 V166 V4 V174 V44 **FLM** V502 (L-24, 22, 21)
 Montreal..... **Sound** POU V487 (L-25)
 Metro Wayne Co... **SAX** V880 V14N V188 **CRL** (L-24, 23)
 Nashville..... **Peteron** V875 MOL V887 **Lebanon** (L-24, L-22, L-14)

O'Hare..... **SAX** V880 **OSK** (L-24, 25)
 Philadelphia..... **Peteron** V875 Warrington (L-24)
 Pittsburgh..... **SAX** TOH V804 ETG V226 **EWG** (L-24)
 Providence..... **Sound** V863 V130 Lafayette (L-24, 25)
 Rochester..... **SAX** V807 Fishers (L-25)
 Toronto..... **SAX** V36 (L-25, 12)
 Washington..... **Peteron** V875 ESR V140 Dayton GTN/Rbn **DCA** (L24)
 Willow Run..... **SAX** V880 V14N V188 V103 **QG** (L-24, 23)

NORFOLK METRO AREA

Charlotte..... **CVI** V194 Midland (L-22, 20)
 Dulles..... **Farnham** V286 **Brandy** (L22)
 Kennedy..... **CCV** V1 **BGT** (L-22, 24)
 Jacksonville..... **CVI** V805 **St. Marys** (L-22, 20, 18)
 LaGuardia..... **CCV** V1 SBY V29 ENO V213 **JFK** (L-22, 24)
 Newark..... **CCV** V1 SBY V29 V433 **Rosky Hill** (L-22, 24)
 Philadelphia..... **CCV** V1 SBY V29 ENO V213 **ODD** (L-22, 24)
 Richmond..... **HCM** V156 (L-22)
 Washington..... **Farnham** V286 V157 **Iremides** (L-22)

OAKLAND—See San Francisco Metro Area**OKLAHOMA CITY**

Dayton..... **Prague** V14S TUL V14 SGF V190 EVV V11 V12 (L-6, 21, 23)
 Wichita..... **Crescent** V77 Mayfield (L-6)

ORLANDO

Atlanta..... **Leesburg** V159 ABY V97 **Brooks** (L-19, 18, 20)
 Jacksonville..... **Sanford** V152 DAB V3E **Shish** (L-19)

PHILADELPHIA METRO AREA

Baltimore..... **EWI** V166 V93 (L-24)
 Boston..... **MIV** 101 rad V837 **HTM** (L-24, L-25)
 Buffalo..... **Boyer** V170 SLT ELZ V119 Burns V36 **Dale** (L-25)
 Cleveland..... **Boyer** V162S HAR V12 AGC V8 BSV V40 **Sharon** (L-24, 23)
 Detroit (City)..... **Boyer** V162S V12 V37 V103 V42 **QG** (L-24, 23)
 Dulles..... **EWI** 305 rad V875 EMI V166 V223 **Sugar Leaf** (L24)
 Kennedy..... **Columbus** V123 **REI** (L-24)
 Jacksonville..... **MIV** 205 rad ATR VI V437 V3 **St. Marys** (L24, 22, 20, 19)
 LaGuardia..... **Columbus** V213 **JFK** (L-24)
 Metro Wayne Co... **Boyer** V162S V12 V37 V103 V42 V10 **CRL** (L-24, 23)
 Miami..... **MIV** 205 rad ATR V1 Control 1150 Sturgeon Tarpon PBI V159E **Oakland** (L28, 27, 19)
 Newark..... **V433 Rosky Hill** (L-24)
 Norfolk..... **MIV** 205 rad ATR VI **CCV** (L24, 22)
 Pittsburgh..... **Boyer** V162S V12 (L-24)
 Rochester..... **Boyer** V170 V31 Fishers (L-24, 25)
 Washington..... **EWI** V166 V140 Dayton GTN/Rbn **DCA** (L24)
 Willow Run..... **Boyer** V162S V12 V37 V103 V42 **QG** (L-24, 23)

PHOENIX

Albuquerque..... **Lake** V190 Suwanee (L-4)
 El Paso..... **V105 CZG** V94 SSO V198 **Harrington Ranch** (L-4)
 Kansas City..... **V190 DHT** V234 HUT V280 TOP V4N **Farley** (L-4, 6)

PITTSBURGH METRO AREA

Buffalo..... V37 EWC V115 (L-24, 12)
 Cleveland..... V40 Sharon (L-23, 24)
 Philadelphia..... CLN V210 HAR V238 ESR (L-24)
 Willow Run..... V40 CLE V26 Park (L-24, 23)

From Greater Pittsburgh only

Atlanta..... V103 Finley V115 TYS V267 OCR (L-24, 22, 20)
 Baltimore..... V103 V92 Keyser V44 MRB V166 EMI (L-24)
 Boston..... Freetport V119 V276 TON V35 ELM V72 ALB V2
 GDM (L-24, 25)
 Charleston, W. Va. V103 Finley V115 PKB V59 V106 (L-24, 22)
 Chicago..... V40 BSV V8 FDY V422 CGT V7 Niles (L-24, 22)
 Columbus..... V103 Woldale V214 (L-24, 23)
 Detroit..... V40 CLE V26 Park (L-24, 23)
 Kennedy..... V119 V276 RBV (L-24)
 Indianapolis..... V210; or Kilgore V210 (L-24, 23)
 LaGuardia..... V119 V276 Reedsville V802 V6 V433 Liberty (L-24)
 Newark..... V119 V276 Reedsville V106 SEG V30 Rocky Hill
 (L-24)
 Philadelphia..... CLN V210 HAR V238 ESR (L-24)
 St. Louis..... Kilgore V210 VLA V14N Godfrey (L-23, 21, 6)
 Washington..... V103 V92 FRR V4 HRN (L-24)

From Allegheny Co. only

Chicago..... AGC V8 FDY V422 CGT V7 Niles (L-24, 23)
 Kennedy..... V802 Reedsville V276 RBV (L-24)
 La Guardia..... V802 SEG V6 V433 Liberty (L-24)
 Newark..... V12 HAR V162 V30 Rocky Hill (L-24)

PROVIDENCE

Kennedy..... V167 V16 V879 DPK (L-25)
 LaGuardia..... V167 V875 V445 Stamford (L25)
 Newark..... V167 HFD V292 Budd Lake (L25)

PORTLAND

Seattle..... V23 Rainier (L-1)

RICHMOND

Philadelphia..... V20 Tappahannock V213 OOD (L-22, 24)

ROCHESTER

Baltimore..... V147 ELM V31 (L-25, 24)
 Boston..... Fishers V31 Bellona V14 GDM (L-25)
 Detroit..... V142 BUF V2 QO V90N Dolphin V90 Park (L-12, 23)
 Kennedy..... V147 GEE V252 BGM V270 V34 V475 DPK (L-25)
 LaGuardia..... V147 ABE V6 V433 Liberty (L-25)
 Newark..... V147 TOH V226 Budd Lake (L25)
 Philadelphia..... V147 ABE V149 V3 Warrington (L25-24)
 Washington..... V147 ELM V31 HAR V265 Dayton GTN Rbn DCA
 (L25-24)
 Willow Run..... V142 BUF V2 QO V90N Dolphin V90 Park (L-12, 23)

SAN ANTONIO

Dallas..... Mission V17 ACT V15 Davis (L-15, 17, 13)
 El Paso..... Guadalupe V222 Rio (L-15, 4)
 Houston..... Clear Spring V198 ELA V180 Arcola (L-15, 17)

SAN FRANCISCO/OAKLAND METRO AREA

O'Hare..... LIN V810 Lakewood (L-2, 5, 7, 8, 11, 23)
 From San Francisco only
 Burbank/Los An- Shrimp V27 SBP V137 Pozo V25 V12 FIM (L-2, 3)
 geles.
 Kennedy..... LIN V810 OBK V84 LAN V2 SVM V116 ERI V170
 V276 RBV (L-2, 5, 7, 8, 11, 23, 12, 24)

ST. LOUIS METRO AREA

Cleveland..... TOY V12 Wilbur V11 IND V14 FDY V8 MFD V246
 Sharon (L-21, 23)
 Columbus..... TOY V12 (L-21, 23)
 Dallas..... V14 EOS V845 Galveston (L-21, 6, 13)
 Ft. Worth..... V14 EOS V15 OKM V161 Justin (L-21, 6, 13)
 Indianapolis..... TOY V12 Wilbur V11 (L-21, 23)
 Kansas City..... V4 Missouri City (L-21)
 Memphis..... V9 Kerrville (L-21, 14)
 Midway/O'Hare... V9 JOT (L-21, 11, 23)
 Tulsa..... V14 (L-21, 6)
 Washington..... TOY V52 EVV V4 HRN (L-21, 22)

SYRACUSE

Kennedy..... V273 HNK V34 V475 DPK (L-25)
 LaGuardia..... V153 V29 V6 V433 Liberty (L25)
 Newark..... V273 Budd Lake (L25)
 Philadelphia..... V29 BGM V149 V3 Warrington (L25-24)

TAMPA METRO AREA

Atlanta..... V87W Scallop V97 Brooks (L-19, 18, 20)
 Miami..... Gibson V97 MIA (L-19)

TORONTO

Kennedy..... V34, V475 DPK (L12, L25)
 LaGuardia..... V36 V147 V6 V433 Liberty (L-12, 25)

TULSA

Chicago..... V14 SGF V63 V116 JOT (L-6, 21, 11, 23)
 Dallas..... OKM V845 Galveston (L-6, 13)
 Dayton..... V140 FYV V72 MAP V190 EVV V11 V12 (L-6, 21)
 Indianapolis..... V140 FYV V72 MAP V190 EVV V11 (L-6, 21)
 St. Louis..... V140 FYV V72 V9 Lenny (L-6, 21)

WASHINGTON/BALTIMORE METRO AREA

Boston..... Swan Point V44 ENO V837 HTM (L24-25)
 Chicago..... Flint Stone V8 FDY V422 CGT (L-24, 23)
 Cleveland..... Flint Stone V8 BSV V40 Sharon (L-24, 23)
 Jacksonville..... BRV V3 St. Marys (L-22, 20, 18)
 Kennedy..... Swan Point V123 RBV (L24)
 LaGuardia..... Swan Point V123 RBV V213 JFK (L24)
 Newark..... Swan Point V433 Rocky Hill (L24)
 Philadelphia..... Swan Point V123 OOD (L24)
 Pittsburgh..... Flint Stone V8 AGC (L-24)

From Washington only

Atlanta..... CSN V140 MOL V143 LYH V222 AVL V35 Clemson
 V20N OCR (L-22, 20)

WASHINGTON/BALTIMORE METRO AREA—Continued

From Washington only

Charleston, W. Va.. **CSN** V143 V156N V174 V4 (L-22)
 Charlotte..... **BRV** V3 RDU V194 Weddington (L-22, 20)
 Dallas..... **CSN** V887 **DAL** (L-22, 21, 14, 13)
 Greensboro..... **CSN** V140 M0L V143 Leaksville (L-22)
 Harrisburg..... **Ashburn** V8N V223 (L-24)
 Jacksonville..... **BRV** V3 **St. Marys** (L-22, 20, 19)
 Memphis..... **CSN** V887 Fisherville (L-22, 21, 14)
 Miami..... **BRV** V806 ILM control 1150 Sturgeon drct Tarpon
 drct PBI V159L **Oakland** (L-22, 20, 19)
 Nashville..... **CSN** V887 **Lohman** (L-22, L-21)
 New Orleans..... **CSN** V875 **Madison** (L-22, 20, 14, 18)
 Norfolk Metro area.. **BRV** V285 Tappahannock V213 HPW HPW 134 rad
 Surry (L22)

From Baltimore only

Jacksonville..... V93 V213 V20 V157 V155 V3 **St. Marys** (L-24, 22,
 20, 19)

From Dallas Intl only

Kennedy..... **EMI** V166 EWT V157 **RBV** or **EMI** V166 V239 V238
 ACY V1 **BGT** (L-24)
 Jacksonville..... **CSN** V39 GVE V155 FAK V3 **St. Marys** (L24)
 LaGuardia..... **EMI** V166 EWT V157 **RBV** V213 **JFK** (L-24)
 Miami..... **CSN** V39 GVE V155 FAK V806 ILM Control 1150
 Sturgeon drct Tarpon drct PBI V159E **Oakland**
 (L22-20-19)
 Newark..... **EMI** V166 EWT V433 **Rocky Hill** (L-24)
 Philadelphia..... **Bradlock** HRN 354 rad V251 V474 **EBR** (L24)

WICHITA

Oklahoma City... Mayfield V77 PNC V77E **Langston** (L6)
 Kansas City..... White Water V77 TOP V4N **Farley** (L-6)

STANDARD INSTRUMENT DEPARTURES (SIDs)

(Explanatory information is provided in Section III)

CONNECTICUT

Bradley Field, Windsor Locks

Narrative form only

AVON TWO DEPARTURE

Departure headings from all runways will be assigned prior to take-off. Via Poughkeepsie VOR 088 radial to Poughkeepsie VOR. Maintain at or below 3,000 feet for 3 minutes after departure; Cross Madison VOR 348 radial at or below 6,000 feet. Cross Bridgeport VOR 856 radial at and maintain (as assigned by ATC), then via (assigned route).

STAFFORD THREE DEPARTURE

Departure headings from all runways will be assigned prior to take-off. Via direct to V146, thence via V146 to Putnam VORTAC; thence via Putnam VORTAC 100 radial to V16, V16 to Mills Intersection. Maintain at or below 3,000 feet for 3 minutes after departure; Cross Putnam VORTAC at (as assigned by ATC). Thence via (assigned route).

MADISON THREE DEPARTURE

Departure headings from all runways will be assigned prior to take-off. Via Hartford VOR 360 radial to Hartford VOR; thence direct Madison VOR; thence V475 to Deer Park VOR. Maintain at or below 3,000 feet for 3 minutes after departure; Cross Madison VOR at (as assigned by ATC), thence via (assigned route).

MASSACHUSETTS

Laurence G. Hanscom Field, Bedford

In Narrative form only

MANCHESTER THREE DEPARTURE

Via 292° magnetic heading to intercept Manchester VORTAC 210 Radial; then via Manchester VORTAC 210 Radial to Manchester VORTAC. Cross Gardner VORTAC 084 Radial/Manchester VORTAC 10 mile DME fix at (as assigned by ATC). Then via (transition) or (assigned route). Albany Transition—Via Manchester VORTAC 289 Radial and Albany VORTAC 097 Radial to Albany VORTAC. Kennebunk Transition—Via Manchester VORTAC 060 Radial and Kennebunk VOR 242 Radial to Kennebunk VOR.

PUTNAM FIVE DEPARTURE

Via Gardner VORTAC 112 Radial, Putnam VORTAC 026 Radial/Gardner VORTAC 17 mile DME fix to Putnam VORTAC. Intercept Putnam VORTAC 026 Radial

at (as assigned by ATC). Cross Gardner VORTAC 146 Radial/Putnam VORTAC 29 mile DME fix at (as assigned by ATC). Then via (transition) or assigned route). Kennedy Transition—Via Putnam VORTAC 210 Radial to intercept J575 thence J575 to Kennedy VORTAC. Huguenot Transition—Via Putnam VORTAC 276 Radial to intercept J77 thence J77 to Huguenot VORTAC.

NEW YORK

Hancock Airport, Syracuse

In narrative form only

KIRKVILLE ONE DEPARTURE

Via front course Syracuse ILS and Georgetown VOR 352 radial to Georgetown VOR; cross Syracuse ILS LOM at 2,000 feet; cross Utica VOR 277 radial at 5,000 feet. Then via (assigned route).

Take-off Runway 14—Turn left after departure direct to Syracuse ILS LOM.

MONROE ONE DEPARTURE

Via front course Syracuse ILS, Georgetown VOR 352 radial to West Monroe Intersection, cross Syracuse ILS LOM at 2,000 feet. Then via (transition) or (assigned route). Florence Transition—Via Syracuse VORTAC 050 radial and V145 to Utica VOR. Syracuse Transition—Via Syracuse VORTAC 050 radial to Syracuse VORTAC. Pulaski Transition—Via Georgetown VOR 352 radial and V29 to Pulaski Intersection.

Take-off Runway 14—Turn left after departure direct to Syracuse ILS LOM.

OHIO

Youngstown Mun Arpt.

In narrative form only

SALEM THREE DEPARTURE

Via Youngstown VOR 197 radial to Ellwood City VORTAC 302 radial. Cross Akron VORTAC 084 radial at 3000 or above. Then via Ellwood City VORTAC 302 radial to the Ellwood City VORTAC. Cross Ellwood City VORTAC (as assigned by ATC), then via assigned route.

Departing aircraft shall be established on the Youngstown VOR 197 radial within 10 miles of the Youngstown VOR.

RHODE ISLAND**T. F. Green Arpt., Providence**

In narrative form only

WARWICK TWO DEPARTURE

Takeoff Runways 5L/R, 34—Turn right as soon as practicable after leaving 500 feet, heading 160 degrees.

Takeoff Runway 16—Climb on runway heading.

Takeoff Runways 23L/R—Turn left as soon as practicable after leaving 500 feet, heading 090 degrees.

Via vector to Providence VORTAC 132 radial, to Quonset VOR 038 radial to Quonset VOR; thence via Quonset VOR 218 radial to V46. Cross Quonset VOR at or below 5000 feet. Cross Norwich VORTAC 124 radial at 7000 feet. Cross Hampton VORTAC 082 radial (as assigned by ATC). Then via (assigned route).

STERLING THREE DEPARTURE

Takeoff Runways 34, 5L/R—Turn left as soon as practicable after leaving 500 feet, heading 250 degrees.

Takeoff Runways 23L/R, 16—Turn right as soon as practicable after leaving 500 feet, heading 340 degrees.

Via vector to Providence VORTAC 284 radial, Providence VORTAC 284 radial to Sterling Intersection. Cross Sterling Intersection (as assigned by ATC). Then via (assigned route).

ADDITIONAL SIDs

In addition to the above, the following areas have SIDs published separately in graphic form in the C & GS low altitude chart package.

Arizona

Sky Harbor Airport, Phoenix

Tucson Int'l. Airport, Tucson

California

Fresno Air Terminal

Lindbergh Airport, San Diego

Lockheed Air Terminal, Burbank

Long Beach Mun. Airport, Long Beach

Los Angeles Int'l. Airport, Los Angeles

Meadows Airport, Bakersfield

Monterey Peninsula Airport

Oakland Int'l. Airport, Oakland

Ontario Int'l. Airport, Ontario

San Francisco Int'l. San Francisco

San Jose Mun. Airport, San Jose

Santa Barbara Mun. Airport, Santa Barbara

Colorado

Stapleton Airport, Denver

District of Columbia

Washington National Airport, D.C.

Florida

Imeson Airport, Jacksonville

Miami Int'l. Airport, Miami

Illinois

O'Hare Int'l. Airport, Chicago

Massachusetts

Logan Int'l. Airport, Boston

Nevada

McCarran Airport, Las Vegas

Reno Mun. Airport, Reno

New Jersey

Newark Airport, Newark

New Mexico

Albuquerque Sunport/Kirtland AFB, Albuquerque

New York

John F. Kennedy Airport, New York

La Guardia Airport, New York

Westchester County Airport, White Plains

Ohio

Burke Lakefront Airport, Cleveland

Oregon

Medford Mun. Airport, Medford

Pennsylvania

Philadelphia Int'l. Airport, Philadelphia

Utah

Salt Lake City Mun. No. 1 Airport, Salt Lake City

Wyoming

Casper Air Terminal, Casper

Cheyenne Mun. Airport, Cheyenne

SUBSTITUTE ROUTE STRUCTURE SHUT DOWN OF ENROUTE NAVIGATION AIDS

An extensive Airways Modernization Program is currently being effected, which requires the scheduled temporary shutdown of selected enroute navigation aids. This action will affect associated airways/routes, MEA's, etc., and will obsolete related information shown on the Enroute Low-Altitude, and High-Altitude U.S. charts. These facilities may be shutdown and/or returned to operation during the period between publication dates of the Enroute U.S. Charts. During this shutdown period the following Substitute Route Structure is operational. NOTAMS are published to cover any change in status of these facilities and pilots are advised to check NOTAMS thoroughly prior to each operation. Pilots are further advised to contact FAA Flight Service Stations regarding any doubtful status of enroute navigation aids or airways.

PENNSYLVANIA

BRADFORD "BFD" VORTAC SHUTDOWN

Due to restriction the flwg substitute route structure is efclv immediately:

Low Altitude

Airways	Existing Airways	Substitute Routes	MEA	MAA
V13/ 236	PSB VORTAC to BFD VORTAC	PSB VORTAC to ETG VOR via PSB VORTAC 346 rad and ETG VOR 166 rad ETG VOR to BFD VORTAC via ETG VOR 335 rad and BFD VORTAC 155 rad COP 15 SE BFD VORTAC	4,100	17,500
			4,100	17,500

SLATE RUN "SLT" VOR SHUTDOWN

VOR will be shut down til aprxly Nov 11 for conversion to VORTAC. For substitute route structure during shutdown use flwg:

Low Altitude

Airways	Existing Airways	Substitute Routes	MEA	MAA
V170- 010	BFD VOR to SLT VOR	BFD VOR to SLT Int via BFD VOR 126 rad	4,500	17,500
V170- 010	SLT VOR to SEG VOR	SLT Int to SEG VOR via SEG VOR 320 rad	7,500	17,500
V180...	TDT VOR to SLT VOR	TDT VOR to SLT Int via TDT VOR 106 rad	7,500	17,500
V180...	SLT VOR to IPT VOR	SLT Int to IPT VOR via IPTVOR 290 rad	5,000	17,500

Existing Reporting Points	Temporary Reporting Points	MRA
SLT VOR.....	Trmpy SLT Int—BFD VOR 126 rad and PSB VOR 008 rad	4,500
Swissdale Int.....	IPT VOR 255 rad and SEG VOR 320 rad	4,000

Existing Reporting Points	Temporary Reporting Points	MRA
Blackwell Int.....	SFK VOR 217 rad and IPT VOR 290 rad	4,000

Jet Routes

Routes	Existing Routes	Substitute Routes
J684...	CRL VOR to JFK VOR	None

TENNESSEE

MEMPHIS "MEM" VORTAC SHUTDOWN

About Nov 15, VORTAC will be shut down til aprxly Nov 26 for relctn. For substitute route structure during shutdown, use flwg:

Low Altitude

Airways	Existing Airways	Substitute Routes	MEA	MAA
V0.....	GRW VORTAC to MEM VORTAC	GRW VORTAC to TS Rbn via GRW VORTAC 005 rad and TS Rbn 185 brg	2,400	17,500
	MEM VORTAC to MAW VOR	TS Rbn to MAW VOR via TS Rbn 359 brg and MAW VOR 175 rad to MAW VOR	3,000	17,500
V0W...	GRW VORTAC to MEM VORTAC	None		
	MEM VORTAC to MAW VOR	TS Rbn to MAW VOR via TS Rbn 325 brg and MAW VOR 191 rad to MAW VOR	3,000	17,500
V0E...	GRW VORTAC to MEM VORTAC	None		

Continued on next page

SUBSTITUTE ROUTE STRUCTURE

AIM-Nov. 11, 1965

Airways	Existing Routes	Substitute Routes	MEA	MAA
V11....	MEM VORTAC to DYR VORTAC	TS Rbn to DYR VORTAC via TS Rbn 022 brg and DYR VORTAC 202 rad	2,500	17,500
V11W..	MEM VORTAC to DYR VORTAC	TS Rbn to DYR VORTAC via TS Rbn 325 brg and DYR VORTAC 231 rad	3,000	17,500
V11E...	MEM VORTAC to Anderson Int	None		
V16....	PBF VOR to MEM VORTAC	PBF VOR to TS Rbn via PBF VOR 061 rad and TS Rbn 240 brg	3,000	17,500
	MEM VORTAC to JKS VOR	TS Rbn to JKS VOR via TS Rbn 056 brg and JKS VOR 242 rad	2,300	17,500
V16B...	PBF VOR to MEM VORTAC	None		
	MEM VORTAC to Selmer Int	None		
V16N..	PBF VOR to MEM VORTAC	None		

Airways	Existing Airways	Substitute Routes	MEA	MAA
V54....	LIT VORTAC to MEM VORTAC	LIT VORTAC to TS Rbn via LIT VORTAC 071 rad and TS Rbn 260 brg	2,500	17,500
	MEM VORTAC to MSL VOR	TS Rbn to MSL VOR via TS Rbn 088 brg and MSL VOR 277 rad	3,000	17,500
V54N..	Hillemann Int to MEM VORTAC	None		
	MEM VORTAC to Selmer Int	None		
V170...	MEM VORTAC to HLI VOR	TS Rbn to HLI VOR via TS Rbn 110 brg and HLI VOR 290 rad	2,000	17,500
V170B- 640	MEM VORTAC to to HLI VOR	None		
V101...	MEM VORTAC to ARG VOR	TS Rbn to ARG VOR via TS Rbn 325 brg and ARG VOR 136 rad	3,000	17,500

Existing Reporting Points	Temporary Reporting Points	MEPA
Memphis VORTAC.....	Memphis (TS) Rbn	1,000
Braden Int.....	TS Rbn 022 brg and NQA VOR 078 rad	1,000
Coldwater Int.....	TS Rbn 185 brg and HLI VOR 250 rad	1,000
Fisherville Int.....	TS Rbn 056 brg and HLI VOR 338 rad	1,000
Marion Int.....	TS Rbn 325 brg and NQA VOR 252 rad	1,000
Porter Int.....	TS Rbn 260 brg and BSA Rbn 302 brg	1,000
Rossville Int.....	TS Rbn 088 brg and HLI VOR 346 rad	1,000
Hillemann Int.....	ARG VOR 183 rad and LIT VORTAC 056 rad	3,000

Existing Reporting Points	Temporary Reporting Points	MEPA
Walls Int.....	TS Rbn 240 brg and BSA Rbn 185 brg	1,000
Gilmore Int.....	TS Rbn 325 brg and DYR VORTAC 231 rad	1,500
Somerville Int.....	TS Rbn 056 brg and HLI VOR 005 rad	1,000
Savage Int.....	TS Rbn 205 brg and HLI VOR 250 rad	1,000
Warsaw Int.....	TS Rbn 142 brg and HLI VOR 250 rad	1,000
Brunswick Int.....	TS Rbn 022 brg and HLI RVO 325 rad	1,000
Germanstown Int.....	TS Rbn 056 brg and NQA VOR 163 rad	1,000
Lucy Int.....	TS Rbn 359 brg and NQA VOR 228 rad	1,000
Ramsey Int.....	TS Rbn 325 brg and NQA VOR 228 rad	1,000
Service Int.....	TS Rbn 088 brg and NQA VOR 163 rad	1,000

All other Ints based on MEM VORTAC are unusable.

High Altitude

Airways	Existing Airways	Substitute Routes	MEA	MAA
J8.....	LIT VORTAC to MEM VORTAC	LIT VORTAC to Tmpy MEM Int via LIT VORTAC 072 rad	FL180	FL450
J8-42..	BNA VORTAC to MEM VORTAC	BNA VORTAC to Tmpy MEM Int via BNA VORTAC 248 rad	FL220	FL450
J29....	SHV VORTAC to MEM VORTAC	SHV VORTAC to Tmpy MEM Int via J101 to LIT VORTAC; thence via LIT VORTAC 072 rad to Tmpy MEM	FL180	FL450
	EVV VORTAC to MEM VORTAC	EVV VORTAC to Tmpy MEM Int via EVV VORTAC 211 rad and DYR VORTAC 029 rad to DYR VORTAC; thence via DYR VORTAC 202 rad to Tmpy MEM Int	FL180	450
J35....	JAN VORTAC to MEM VORTAC	JAN VORTAC to Tmpy MEM Int via JAN VORTAC 350 rad and GRW VORTAC 169 rad to GRW VORTAC; thence via GRW VORTAC 006 rad to Tmpy MEM Int	FL180	FL450

Continued on next page

Routes	Existing Routes	Substitute Routes	MEA	MAA
	STL VORTAC to MEM VORTAC	STL VORTAC to Tmpy MEM Int via STL VORTAC 168 rad and ARG VORTAC 017 rad to ARG VORTAC; thence via ARG VORTAC 136 rad to Tmpy MEM Int	FL180	FL450
J41....	BHM VORTAC to MEM VORTAC	BHM VORTAC to Tmpy MEM Int via BHM VORTAC 297 rad	FL190	FL450
	SGF VORTAC to MEM VORTAC	SGF VORTAC to Tmpy MEM Int via SGF VORTAC 115 rad and ARG VORTAC 299 rad and ARG VORTAC; thence via ARG VORTAC 136 rad to Tmpy MEM Int	FL180	FL450
J42....	TXK VORTAC to MEM VORTAC	TXK VORTAC to Tmpy MEM Int via TKK VORTAC 058 rad and LIT VORTAC 210 rad to LIT VORTAC thence via LIT VORTAC 072 rad to Tmpy MEM Int	FL 180	FL 450
J116...	CHA VORTAC to MEM VORTAC	CHA VORTAC to Tmpy MEM Int via CHA VORTAC 228 rad and BHM VORTAC 045 rad; thence via BHM VORTAC 297 rad to Tmpy MEM Int	FL180	FL450
J171...	ENL VORTAC to MEM VORTAC	ENL VORTAC to Tmpy MEM Int via ENL VORTAC 208 rad and ARG VOR 027 to ARG VOR; thence via ARG VOR 136 rad to Tmpy MEM Int	FL180	FL450

Existing Reporting Points	Temporary Reporting Points	MRA
MEM VORTAC.....	Tmpy MEM Int—LIT VORTAC 072 rad and ARG VORTAC 136 rad and GRW VORTAC 006 rad	FL180

UTAH

BONNEVILLE "BVL" VORTAC SHUT DOWN

About Dec 6, VORTAC will be shut down until aprxly Dec 10 for mod. For substitute route structure during shutdown, use flwg:

Low Altitude

Airways	Existing Airways	Substitute Routes	MEA	MAA
V22/ 610	EKO VORTAC to BVL VORTAC	None		

Airways	Existing Airways	Substitute Routes	MEA	MAA
V32/ 610	BVL VORTAC to Timpie Int	Tmpy BVL Int. to Timpie Int. via the SLC 249 rad	13,000	17,500
V22N...	LWL VOR to BVL VOR	LWL VOR to Tmpy BVL Int via LWL 097 rad	13,000	17,500
V253...	LCU VOR to BVL VOR to Timpie Int.	LCU VOR to Timpie Int. via the LCU 157 rad and the SLC 249 rad	13,000	17,500
V280...	ELY VOR to Shafter Int.	ELY VOR to Tmpy Shafter Int via Ely 350 rad	16,000	17,500

Existing Reporting Points	Temporary Reporting Points	MRA
BVL VORTAC.....	Tmpy BVL Int—LCU 157 rad SLC 249 rad—or the LWL 097 rad	13,000
Shafter Int.....	ELY 350 rad and LWL 097 rad	16,000

High Altitude

Routes	Existing Routes	Substitute Routes	MEA	MAA
J84/84..	BAM VOR to BVL VORTAC to SLC VORTAC	BAM VOR to EKO VOR via BAM 059 rad and EKO 241 rad EKO VORTAC to SLC VORTAC via EKO 074 rad and SLC 249 rad	FL 180	450

VIRGINIA

PULASKI "PSK" VORTAC SHUTDOWN

Tmpy VOR comsnd. Ident: PSK. Freq: 115.9, Class: H-VORW. during indefinite shutdown of Pulaski VORTAC. For substitute route structure use the follows:

Low Altitude

Airways	Existing Airways	Substitute Routes	MEA	MAA
V-37...	PSK VOR to Frankford Int.	Via Tmpy PSK VOR 016 rad to Frankford Int.	6,000 PSK-Zenith 8,000 Zenith-Frankford MRA 17,500	
V-18...	PSK VOR to ROA VOR	Via Tmpy PSK VOR 070 rad to midpoint	5,000	17,500
V-138..	PSK VOR to Table Int	Via Tmpy PSK VOR 101 rad to Table Int	5,500	17,500
V-45...	PSK VOR to Francisco Int	Via Tmpy PSK VOR 154 rad to Francisco Int.	6,000	17,500
V-37- 630	PSK VOR to COP...	Via Tmpy PSK VOR 189 rad to COP	7,000	17,500

COP 40 NM from PSK VOR & 85 NM from FML VOR

Continued on next page

SUBSTITUTE ROUTE STRUCTURE

AIM-Nov. 11, 1965

Airways	Existing Airways	Substitute Routes	MEA	MAA
V-37W.	PSK VOR to HKY VOR	Via Tmpy PSK VOR 202 rad and HKY VOR 021 rad	5,500	17,500
V-6-875	PSK VOR to Sugar Grove Int	Via Tmpy PSK VOR 242 rad to Sugar Grove Int	7,700	17,500
V-16N.	PSK VOR to BLA VOR	Via Tmpy PSK VOR 258 rad to midpoint	6,600	17,500
V-45...	PSK VOR to BLF VOR	Via Tmpy PSK VOR 295 rad and BLF VOR 115 rad	6,000	17,500
V-59, 839	PSK VOR to BKW VOR	Via Tmpy PSK VOR 335 rad to midpoint	6,000	17,500

Existing Reporting Points	Temporary Reporting Points	MRA
PSK VOR.....	Tmpy PSK VOR	
Zenith Int.....	Tmpy PSK VOR 016 rad and CLD VOR 255 rad	
Table Int.....	Tmpy PSK VOR 101 rad and ROA VOR 181 rad	
Willis Int.....	None	
Lindside Int.....	Tmpy PSK VOR 035 rad and ROA VOR 288 rad	
Saw Mill Int.....	Tmpy PSK VOR 189 rad and BLF VOR 148 rad	
Burch Int.....	None	
Max Meadows Int.....	Tmpy PSK VOR 242 rad and BLF VOR 157 rad	
Bland Int.....	Tmpy PSK VOR 258 rad and BLF VOR 157 rad	
Hicksville Int.....	BLF VOR 115 rad and BKW VOR 177 rad	
Rockcamp Int.....	Tmpy PSK VOR 009 rad and BKW VOR 133 rad	

Jet Routes

Airways	Existing Airways	Substitute Routes	MEA	MAA
J-22...	TYS VOR to PSK VOR	TYS 064 rad and Tmpy PSK VOR 249 rad	FL180	FL450
	PSK VOR to GVE VOR	Tmpy PSK VOR 068 rad and GVE VOR 252 rad	FL180	FL450
J-48...	EMI VOR to PSK VOR	EMI VOR 240 rad and Tmpy PSK VOR 054 rad	FL180	FL450
J-53...	AGC VOR to PSK VOR	AGC VOR 195 rad and Tmpy PSK VOR 012 rad	FL180	FL450
	PSK VOR to SPA VOR	Tmpy PSK VOR 209 rad and SPA VOR 026 rad	FL180	FL450

RICHMOND "RIC" VOR SHUTDOWN

VOR will be shut down until aprxly Nov 11 for mod. For substitute route structure during shutdown, use flwg:

Low Altitude

Airways	Existing Airways	Substitute Routes	MEA	MAA
V157...	LVL VOR to RIC VOR	LVL VOR to RIC Int via LVL VOR 039 rad and RIC Rbn 220 brg	2,000	17,500
V157...	RIC VOR to DCA VOR	RIC Int to DCA VOR via RIC Rbn 016 brg and DCA VOR 196 rad	2,000	17,500
V157W.	BRV VOR to RIC VOR	BRV VOR to RIC Int via BRV VOR 193 rad and RIC Rbn 357 brg	2,000	17,500
V158...	Rockville Int to RIC VOR	Rockville Int to RIC Int via RIC Rbn 319 brg	2,000	17,500
V160...	RIC VOR to HCM VOR	RIC Int to HCM VOR via RIC Rbn 094 brg and HCM VOR 284 rad	2,000	17,500
V20N...	RIC VOR to FAK VOR	RIC Int to FAK VOR via RIC Rbn 285 brg and FAK VOR 105 rad	2,000	17,500
V260...	HPW VOR to RIC VOR	RIC Int to HPW VOR via RIC Rbn 135 brg and HPW VOR 315 rad	1,700	17,500
V20....	RIC VOR to Nutbush Int	RIC Int to Nutbush Int via RIC Rbn 246 brg	2,000	17,500
V20....	RIC VOR to Tappahannock Int	RIC Int to Tappahannock Int via RIC Rbn 044 brg	2,000	17,500

Existing Reporting Points	Temporary Reporting Points	MRA
Epworth Int.....	RIC Rbn 016 brg and FAK VOR 066 rad	2,000
Bagby Int.....	RIC Rbn 016 brg and GVE VOR 103 rad	2,000
Grubbs Int.....	RIC Rbn 016 brg and BRV VOR 138 rad	2,000
Petersburg Int.....	RIC Rbn 220 brg and HPW VOR 267 rad	1,700
Dalton Int.....	RIC Rbn 220 brg and FAK VOR 162 rad	1,800
Amelia Int.....	RIC Rbn 246 brg and FAK VOR 177 rad	2,000
RIC VOR.....	RIC Rbn	1,500
New Kent.....	RIC Rbn 094 brg and HPW VOR 025 rad	2,000
Beaverdam Int.....	FAK VOR 031 rad and RIC Rbn 341 brg	2,000

Continued on next page

SUBSTITUTE ROUTE STRUCTURE

Existing Reporting Points	Temporary Reporting Points	MRA
Whitehouse Int.....	HPW VOR 025 rad and RIC Rbn 070 brg	2,000
Summers Int.....	HPW VOR 025 rad and RIC Rbn 083 brg	2,000

Jet Routes

Routes	Existing Routes	Substitute Routes	MEA	MAA
J14....	GSO VOR to J-37- 55/J-14 Int	GSO VOR to J-37-55/ J-14 Int via GSO VOR 058 rad and FAK VOR- TAC 211 rad to FAK; thence via J-55.	18,000	45,000
J40....	ILM VORTAC to J-37-55/J-40 Int	ILM VORTAC to J-37-55/ J-40 Int via J-77-109 and J-55 to FAK VOR TAC; thence via J-55	18,000	45,000
J52....	RDU VORTAC to RIC VOR	RDU VORTAC to FAK VORTAC via J-55	18,000	45,000

Existing Reporting Point	Substitute Reporting Point
RIC VOR.....	None

WISCONSIN

GRANTSBURG "GTG" VOR SHUTDOWN

About Nov 15, VOR will be shut down until aprxly Nov 19 for mod. For substitute route structure during shutdown, use flwg:

Low Altitude

Airways	Existing Airways	Substitute Routes	MEA	MAA
V13....	DLH VOR to GTG VOR	DLH VOR to GTG Int via DLH 193 rad	6,000	17,500
	GTG VOR to White Bear Int	GTG Int to White Bear Int via FGT VOR 011 rad	6,000	17,500
V65....	BRD VOR to GTG VOR	BRD VOR to GTG Int via BRD VOR 115 rad	6,000	14,000
	GTG VOR to EAU VOR	GTG Int to EAU VOR via EAU VOR 312 rad	6,000	17,000

Airways	Existing Airways	Substitute Routes	MEA	MAA
V13W...	MSP VOR to GTG VOR	MSP VOR to GTG Int via MSP VOR 032 rad		
V13E...	GTG VOR to DLH VOR	None		

Existing Reporting Points	Temporary Reporting Points	MRA
GTG VOR	Tmpy GTG Int—EAU VOR 312 rad and MSP VOR 032 rad	6,000
Boardman Int	MSP VOR 094 rad and FGT VOR 038 rad	3,000
Ramey Int	None	

WAUBSAU "AUW" SHUTDOWN

VOR will be shut down til aprxly Dec 3 for conversion to VORTAC. For substitute route structure during shutdown, use flwg:

Low Altitude

Airways	Existing Airways	Substitute Routes	MEA	MAA
V181...	RHI VOR to AUW VOR	RHI VOR to AUW Int via RHI VOR 185 rad	4,500	17,500
	STE VOR to AUW VOR	STE VOR to AUW Int via STE VOR 351 rad	4,500	17,500
V28...	Wolf Int to AUW VOR	Wolf Int to AUW Int via GRB VOR 286 rad	4,500	17,500
	Cadott Int to AUW VOR	Cadott Int to AUW Int via EAU VOR 087 rad	6,000	17,500

Existing Reporting Points	Temporary Reporting Points	MRA
AUW VOR.....	Tmpy AUW Int—STE VOR 351 rad and GRB VOR 286 rad	4,500
Wittenberg Int.....	GRB VOR 286 rad and STE VOR 036 rad	4,500
Edgar Int.....	EAU VOR 087 rad and STE VOR 315 rad	6,000
Junction City Int.....	None	

SECTIONAL CHART BULLETIN

The purpose of this Bulletin is to provide a tabulation of the major changes in aeronautical information that have occurred since the last publication date of each Sectional Aeronautical Chart. The general policy is to include only those changes to controlled airspace and special use airspace that present a hazardous condition or impose a restriction on the pilot; major changes to airports and radio navigational facilities, thereby providing the VFR pilot with the essential data necessary to update and maintain his chart current. When the Sectional Aeronautical Chart is republished, the corrective tabulation will be removed from this Bulletin.

NOTE: New data which have been added to this issue are shown below the rule line under the appropriate chart.

•ABERDEEN

40th Edition, August 19, 1965

Delete Williams Ranch arpt 45°20'N, 99°00'W. Delete Aberdeen LFR 45°24'34"N, 98°25'07"W. Add Brookings RBN freq 823 Ident BKX class HW 44°18'20"N, 98°48'28"W.

ALBANY

55th Edition, July 22, 1965

Delete awy bcn site #8 code — ● — 42°28'N, 77°39'W. Delete awy bcn site #23 code ● ● ● — 44°04'N, 73°17'W. Delete Ithaca arpt 42°27'15"N, 76°31'W. Delete awy bcn site #39B code — — ● 42°59'N, 74°42'W. Add obstn 1665' MSL 42°57'35"N, 72°23'05"W. Delete Smith arpt 43°07'N, 76°55'W. Add obstn 1973' MSL 42°20'35"N, 76°07'05"W. Delete Delmar FM 42°39'N, 73°52'W. Delete awy bcn site #4 42°22'05"N, 73°08'33"W. Add obstn 2746' MSL 42°02'28"N, 78°00'23"W. Relocate Rutland RBN from 43°37'04"N, 72°59'45"W to 43°33'35"N, 72°57'50"W.

ALBUQUERQUE

55th Edition, August 19, 1965

No hazardous changes.

AROOSTOCK

42nd Edition, April 29, 1965

Change obstn elev 682' MSL to 705' MSL 46°03'N, 68°28'W. Delete Loring AFB Military Climb Corridor R-3902 freq 126.2.

•AUSTIN

60th Edition, Nov. 11, 1965

No hazardous changes.

BEAUMONT

54th Edition, Sept. 16, 1965

No hazardous changes.

BELLINGHAM

51st Edition, May 27, 1965

Change Campbell River RBN freq 215 to 208. Change Victoria Intl ctl twr freq 236.6 to 239.6. Add Princeton VOR freq 113.9 Ident DC class BVOR mag var 28°E 49°22'54"N, 120°22'24"W.

•BIRMINGHAM

60th Edition, October 14, 1965

Add obstn 838' MSL 31°57'02"N, 86°36'11"W.

•BOISE

41st Edition, May 27, 1965

Correct Mountain Home arpt elev 2350' MSL to 8161' MSL 43°08'N, 115°44'W. Correct South Prairie arpt name to Smith Prairie 43°30'N, 115°38'W. Delete Klamath Falls LFR leg 42°07'05"N, 121°43'41"W. In eastern border delete Burley LFR legs box and type.

BOSTON LOCAL CHART

33rd Edition, March 4, 1965

In the Edition note correct the next scheduled edition to read September 16, 1965 versus June 24, 1965.

•BOSTON

56th Edition, Sept. 16, 1965

Add NW extn to Pease AFB ctl zone. Add N extn to NAS Brunswick ctl zone. Add Provincetown (Oper by Mass) RBN freq 230 Ident PVC class MHW 42°03'42"N, 70°14'36"W.

•BURLINGTON

45th Edition, November 11, 1965

No hazardous changes.

•BUTTE

44th Edition, July 22, 1965

Delete Stanford FM 47°12'N-110°08'W. Delete awy bcn site #47 code — • • 46°32'51''N, 112°38'07''W. Delete awy bcn site #1 code • — — 46°32'29''N, 111°42'39''W. Delete awy bcn site #5 code • — • 45°58'15''N, 111°19'50''W. Delete awy bcn site #45 code • — • 47°11'08''N, 111°48'00''W. Delete awy bcn site #43 46°51'15''N, 111°57'12''W. Delete awy bcn site #44 code • • • • 47°02'N, 111°57'W. Delete awy bcn site #56 code — • — 47°20'11''N, 110°41'28'W. Delete Clearwater arpt 47°03'N, 119°15'W. Delete Helena LFR 46°38'24''N, 111°56'11''W. Delete Winston FM 46°31'30''N, 111°-Bozeman 320°M to Bozeman. Delete Lewiston Rbn 47°04'08''N, 109°32'15''W. In southern border delete Whitehall LFR legs box and type.

•CASPER

50th Edition, October 14, 1965

Delete Glendo South arpt 42°27'N, 105°01'W.

•CHARLOTTE SECTIONAL CHART

57th Edition, October 14, 1965

Add obstn 385' MSL 33°53'59''N, 79°27'14''W. Change obstn elev 1383' MSL to 1273' MSL 35°17'28''N, 81°-14'10''W.

•CHATTANOOGA

56th Edition, August 19, 1965

Delete Brentwood Rbn 36°02'18''N, 86°43'02''W. Change Bomar FM code — — to • —. Relocate Nashville Rbn freq 304 Ident BN class H-SAB/LOM from 36°06'N, 86°37'52''W to 36°02'18''N, 86°43'02''W. Add Crossville Rbn freq 375 Ident CMA class MHW 35°58'06''N, 84°59'40''W. Change Rome VOR freq 110.6 to 115.4. Add obstn 1650' MSL 36°02'04''N, 84°15'15''W.

•CHEYENNE

52nd Edition, June 24, 1965

Delete awy bcn site #5 code • — • 41°52'N, 104°54'W. Delete Cheyenne RBN 41°09'N, 104°50'W. Realign airway V26 direct from Vernal to Cherokee (031°M Vernal). Add airway V138 direct from Riverton to Medicine Bow (107° M Riverton). Revise Alliance transition area to include airspace 8 mi wide from Alliance Muni arpt 42°-02'50''N, 102°48'30''W to Chadron Muni arpt 42°50'10''N, 103°05'50''W. Delete Akron RBN 40°10'N, 103°11'W.

•CHICAGO

60th Edition, May 27, 1965

Add obstn 875' MSL 41°41'15''N, 86°58'25''W. Add obstn 1870' MSL 41°46'22''N, 84°44'34''W. Add obstn

1120' MSL 40°27'10''N, 88°57'56''W. Add obstn 1049' MSL 41°54'11''N, 83°59'13''W. Relocate Ft. Wayne RBN 40°56'39''N, 85°14'54''W to 40°55'50''N, 85°07'11''W. Delete Mt. Hawley arpt 40°47'N, 89°36'W. Change Lafayette VORTAC freq 113.7 Ch. 84 to 115.6 Ch 103. Delete Donavan arpt 40°11'N, 89°41'W. Delete Triangle arpt 41°31'N, 87°29'W. Restore Chatsworth arpt 40°44'N, 88°18'W. Add obstn 955' MSL 40°25'N, 89°31'45''W. Add obstn 1390' MSL 42°01'23''N, 84°-14'48''W. Add obstn 1060' MSL 39°54'27''N, 88°16'57''W. Add Kankakee RBN freq 272 Ident IKK class MHW 41°04'N, 87°51'W.

•CINCINNATI

60th Edition, August 19, 1965

Delete Capital ctl twr freq 239. Delete Herschberger arpt 39°43'N, 88°30'W. Add obstn 895' MSL 38°59'51''N, 88°10'W. Add obstn 1078' MSL 38°23'49''N, 88°-21'29''W. Add Palestine RBN (Non-Federal) freq 391, Ident PLX class MHW 39°00'43''N, 87°38'27''W. Add obstn 1060' MSL 39°54'27''N, 88°16'57''W. Add Mt. Vernon RBN (non-Federal) freq 414 Ident MVN class MHW 38°19'15''N, 88°51'45''W.

•CLEVELAND

61st Edition, November 11, 1965

No hazardous changes.

•CORPUS CHRISTI

55th Edition, July 22, 1965

Change Navy Kingsville VOR freq 117.8 to 109.6. Delete Rio Grande Valley Intl ctl twr freq 278. Add obstn 287' MSL 26°42'12''N, 97°46'06''W.

•DALLAS

61st Edition, July 22, 1965

Delete Lubbock LFR 33°39'N, 102°02'W. Delete Abilene ctl freq 278. Add obstn 1255' MSL 33°13'17''N, 97°46'59''W. Delete Park Cities arpt and add aband symbol 32°54'N, 96°53'W.

•DEL RIO

41st Edition, November 11, 1965

No hazardous changes.

•DENVER

54th Edition, June 24, 1965

Delete FL bcn 39°38'N, 106°51'W. Delete FL bcn 39°38'N, 106°58'W. Increase obstn 5708' MSL to 5887' MSL 39°41'06''N, 105°04'04''W. Delete unicom USAF Academy 38°58'N, 104°49'W. Twr comsnd USAF Academy arpt freqs 320.1 & 126.2. Delete Rocky Mountain arpt 39°47'N, 104°44'W. Delete Denver RBN 39°48'N, 104°54'W.

•DES MOINES

54th Edition, November 11, 1965

No hazardous changes.

•DETROIT

59th Edition, July 22, 1965

Delete Campell Cross FM 43°47'N, 79°52'W. Delete Woodbridge FM 43°47'N, 79°38'W. Add obstn 945' MSL 42°55'10"N, 79°12'W. Add obstn 990' MSL 42°44'N, 81°55'29"W. Add obstn 1130' MSL 43°05'07"N, 79°04'45"W. Add obstn 2748' MSL 42°02'28"N, 78°00'23"W. Relocate Detroit RBN from 42°13'45"N, 83°23'38"W to 42°07'11"N, 83°25'54"W change ident DTW to DT class SABH to HSAB. Delete Selfridge RBN 42°42'N, 82°50'10"W.

•DOUGLAS

43rd Edition, October 14, 1965

No hazardous changes.

•DUBUQUE

50th Edition, Sept. 16, 1965

Delete Woodside Ranch arpt 43°48'N, 89°58'W. Add obstn 1507' MSL 43°05'18"N, 91°34'28"W. Add obstn 1381' MSL 43°19'31"N, 91°47'20"W. Add Ames RBN freq 275 ident AMW class MHW 41°59'40"N, 93°37'34"W.

DULUTH

39th Edition, July 22, 1965

Add obstn 1750' MSL 40°26'30"N, 94°22'49"W. Add obstn 1923' MSL 46°28'47"N, 89°55'28"W. Add obstn 1743' MSL 47°18'55"N, 92°12'39"W. Add obstn 1835' MSL 46°57'29"N, 95°06'12"W.

•ELKO

44th Edition, May 27, 1965

Delete Lovelock RBN 40°08'N, 118°08'W. Change Battle Mountain VOR freq 114.0 to 112.2. Delete awy bcn site #32 code • • — 40°19'N, 117°30'W. Delete awy bcn site #28A code — • • • 40°05'N, 118°11'W. Delete awy bcn site #50 code — — 40°55'N, 114°17'W. Delete Carlin FM 40°44'N, 116°07'W. Delete Battle Mountain RBN 40°32'N, 116°48'W. Delete awy bcn site #40 code — — 40°44'N, 115°59'W. In northern border delete Burley LFR leg box and type.

EL PASO

54th Edition, August 19, 1965

Add obstn 3494' MSL 31°40'24"N, 102°32'18"W. Add obstn 3555' MSL 31°45'38"N, 102°33'24"W. Delete El Paso Intl ctl twr freq 224. Add obstn 5300' MSL 30°21'05"N, 103°39'20"W.

FARGO

43rd Edition, August 19, 1965

Delete Broadhead arpt 46°23'N, 101°33'W. In southern border delete Aberdeen LFR legs box and type.

Delete Jamestown LFR 46°55'39"N, 98°38'18"W. In western border delete Dickinson LFR leg box and type.

GLACIER PARK

38th Edition, October 14, 1965

No hazardous changes.

•GRAND CANYON

40th Edition, May 27, 1965

Delete Lukachukai arpt 36°24'N, 109°15'W. Add Cortez, Colo. ctl zone 5 ml radius Montezuma Co arpt 37°18'15"N, 108°37'35"W. Add Cortez VOR freq 108.4 ident CEZ class LBVOR mag var 14°E 37°23'N, 108°34'W. Delete awy bcn site #37 Code — • • 37°31'N, 113°48'W. Twr comsnd Farmington freqs 118.5 and 257.8.

GRAND JUNCTION

43rd Edition, November 11, 1965

Correct elev Williams Ranch Arpt 38°10'N, 108°21'W to read 6842'.

•GREEN BAY

51st Edition, May 27, 1965

Delete Saffs arpt 44°12'N, 84°10'W. Add Stevens Point arpt ctl zone 5 ml radius with extns E NE SW & NW 44°32'38"N, 89°31'50"W. Add obstn 1440' MSL 44°01'14"N, 89°34'07"W. Add obstn 1100' MSL 44°32'55"N, 87°47'03"W. Delete Austin-Straubel ctl twr freq 278. Delete Outagamie County (old) arpt 44°17'N, 88°22'W. Restore Bay Shore arpt 44°34'N, 88°02'W. Add Appleton Rbn freq 407 ident ATW class MHW 44°15'40"N, 88°31'10"W. Add obstn 1580' MSL 44°00'54"N, 84°51'47"W. Add obstn 1791' MSL 44°34'10"N, 84°41'33"W. Add obstn 1610' MSL 44°57'22"N, 84°18'48"W. Add obstn 900' MSL 44°14'51"N, 88°18'W. Add transition area 5ml radius Land O Lakes Muni arpt 46°00'15"N, 89°12'40"W including NW extn 12ml from arpt 18ml wide & SW extn 8N ml wide extending to Rhinelander VOR. Delete Donlins SPB 45°40'N, 89°37'W. Relocate Reed City RBN 43°54'N, 85°31'W to 43°57'84"N, 85°31'37"W. Add obstn 980' MSL 44°16'30"N, 88°33'40"W.

HAWAIIAN ISLAND

17th Edition, December 10, 1964

Delete Maui LFR 20°38'N, 158°27'W. Delete Kahuku RBN 21°42'N, 157°57'W. Add obstn 404' MSL 25°53'31"N, 159°33'24"W. Delete Hilo LFR 19°44'N, 155°02'W.

•HUNTINGTON

54th Edition, August 19, 1965

Add obstn 820' MSL 38°02'19"N, 77°55'20"W. Delete Patton arpt 39°11'N, 80°16'W. Delete awy bcn #34 code • • • • 38°57'38"N, 78°20'W. Delete awy bcn #32 code • • — 38°58'41"N, 78°37'54"W. Delete awy

bcn #31 code • — — 38°58'57''N, 78°54'31''W. Delete
awy bcn #8 code — • • • 30°31'48''N, 78°18'48''W.
Delete awy bcn #9 code — — • 30°30'00''N, 78°28'24''
W. Delete flashing awy bcn 30°20'19''N, 78°11'45''W.

Correct Newcombe omni bearing 151° to 051°. Add
obstn 1588' MSL 39°17'50''N, 80°47'40''W. Add obstn
1348' MSL 39°53'05''N, 83°25'23''W. Add obstn 1300'
MSL 39°42'41''N, 79°55'43''W. Add obstn 1597' MSL
38°51'42''N, 80°59'03''W.

•JACKSONVILLE

53rd Edition, November 11, 1965

No hazardous changes.

KANSAS CITY

56th Edition, August 19, 1965

Add Jefferson City VOR freq 110.2 Ident JEF class
TVOR mag var 6°E 38°35'32''N, 92°09'38''W. Change
Richards-Gebaur AFB Military Climb Corridor R-4502
from 369.8 to 322.5. Add obstn 1169' MSL 38°51'26''N,
93°19'08''W. Add ctl zone 5 mi radius Jefferson City
arpt 38°35'33''N, 92°09'39''W with NW and SE extn.
Add obstn 1284' MSL 39°08'46''N, 93°11'14''W. Add
obstn 1396' MSL 38°59'47''N, 95°23'11''W. Add obstn
1255' MSL 39°08'48''N, 94°52'41''W.

KANSAS CITY LOCAL

34th Edition, August 19, 1965

Change mag. variation note to read 8°E.

KLAMATH FALLS

53rd Edition, Sept. 16, 1965

Delete Medford ctl twr freq 278. Add Montague Calif
ctl zone 5 mi radius Siskiyou Co. arpt 41°48'55''N,
122°28'W with SW extn excluding airspace within 1 mi
radius of Montague Yreka arpt 41°43'50''N, 122°32'-
45''W.

•KOOTENAI

41st Edition, February 4, 1965

Add Kelowna RBN freq 257 Ident LW class HW.
50°08'45''N, 119°24'50''W. Add Rutland RBN freq 874
Ident EX class MHW 49°50'20''N, 119°22'30''W. Add
Kimberly VOR freq 112.1 Identt QE class BVOR mag
var 22°E 49°31'15''N, 116°05'13''W. Delete Castlegar
FM 49°18'N, 117°38'W. Delete Nighthawk State Emerg
arpt 49°00'N, 119°37'W.

•LA GRANDE

43rd Edition, July 22, 1965

Delete Woodpecker arpt 45°41'N, 118°44'W. Delete
Baker LFR 44°51'39''N, 117°50'28''W. Delete Pendleton
LFR 45°41'30''N, 118°47'35''W.

LAKE HURON

40th Edition, May 27, 1965

Delete Markham arpt 43°53'N, 79°11'W. Add obstn
1100' MSL 44°17'00''N, 78°42'05''W. Add obstn 1122'

MSL 44°29'35''N, 79°07'08''W. Add obstn 1417' MSL
44°58'30''N, 79°10'29''W. Add obstn 1678' MSL 45°24'-
30''N, 79°15'30''W. Delete Camp Borden ctl twr freq
212. Add obstn 980' MSL 44°16'30''N, 83°38'40''W.

LAKE SUPERIOR

42nd Edition, August 19, 1965

Add obstn 1928' MSL 46°28'47''N, 89°55'28''W. In
eastern border add VOR type to Sudbury freq 112.8 Ident
SB code • • •, — • • •. Add transition area 5 mi
radius Land O Lakes Muni arpt 46°09'15''N, 89°12'40''
W including NW extn 12 mi from arpt 18 mi wide &
SW extn 8N mi wide extending to Rhinelander VOR.

LAKE OF THE WOODS

38th Edition, August 19, 1965

Add obstn 1243' MSL 48°50'39''N, 95°43'48''.

•LEWISTON

44th Edition, November 11, 1965

No hazardous changes.

•LINCOLN

53rd Edition, October 14, 1965

Add obstn 1598' MSL 40°49'19''N, 96°23'08''W. Add
obstn 1490' MSL 40°14'46''N, 96°01'51''W. Add obstn
1506' MSL 40°37'35''N, 95°56'05''W.

LITTLE ROCK

48th Edition, July 22, 1965

Add obstn 1988' MSL 35°30'42''N, 94°21'51''W. Delete
UNICOM Newport arpt 35°38'N, 91°11'W. Add obstn
2272' MSL 34°28'28''N, 92°12'09''W. Add obstn 622'
MSL 34°15'57''N, 92°08'11''W. Add obstn 728' MSL
35°47'41''N, 90°44'47''W. Add obstn 534' MSL 35°00'-
27''N, 90°50'57''W. Delete Dresser arpt 84°45'N, 95°-
01'W.

•LOS ANGELES

60th Edition, August 19, 1965

Delete UNICOM Chino arpt 33°58'N, 117°38'W. Delete
Double J Ranch arpt 34°27'N, 116°50'W. Change Santa
Monica Muni ctl twr freq 120.9 to 120.1. Correct ctl twr
freq 204.8 to 240.8 Long Beach. Change Van Nuys ctl
twr freq 120.1 to 120.3. Delete Costerisan Farm arpt
35°16'N, 119°03'W. Delete Cole Ranch arpt 34°50'N,
116°44'W. Delete Flying C. Ranch arpt 33°30'N, 118°-
13'W. Delete Henderson arpt 34°28'N, 119°17'W. Delete
Firsick arpt 34°46'N, 118°00'W. Delete Parker Patch
arpt 34°32'N, 117°28'W. Delete Shepherd arpt 34°01'N,
118°03'W. Delete Cones arpt 34°10'N, 116°02'W. Delete
Rancho Conejo arpt 34°12'N, 118°55'W. Ctl twr comnd
Riverside arpt freqs 121.0 and 257.8.

•MIAMI

52nd Edition, Sept. 16, 1965

Delete Aero Country Club arpt 25°40'N, 80°16'W.
Add obstn 354' MSL 26°22'14''N, 80°10'21''W. Add obstn

438' MSL 20°28'45"N, 81°25'55"W. Add obstn 318' MSL 20°42'25"N, 81°50'20"W. Delete Bradley arpt 26°09'N, 80°10'W.

MILES CITY

44th Edition, October 14, 1965

No hazardous changes.

MILWAUKEE

58th Edition, May 27, 1965

Add Timmerman ctl twr freq 257.8 Delete Truax Field ctl twr freq 278. Add obstn 1375' MSL 42°57'13"N, 89°08'14"W. Add obstn 1285' MSL 42°33'55"N, 88°45'39"W. Add obstn 1415' MSL 44°01'14"N, 89°34'07"W. Add obstn 898' MSL 42°47'41"N, 86°06'22"W. Add obstn 1062' MSL 43°00'10"N, 84°34'10"W. Add Mt. Pleasant State VOR freq 109.8 Ident MOP class TBVOR mag var 2°W 43°37'24"N, 84°44'42"W. Delete Waukegan arpt 42°24'N, 87°53'W. Add obstn 1225' MSL 42°15'30"N, 88°21'48"W. Add obstn 1580' MSL 44°00'54"N, 84°51'47"W. Add obstn 2240' MSL 43°03'09"N, 89°28'41"W. Delete Woodside Ranch arpt 43°48'N, 89°58'W. Add obstn 1231' MSL 42°21'26"N, 88°19'55"W. Ctl twr comsmd Sheridan AAF. Add obstn 1549' MSL 42°17'48"N, 89°10'15"W. Add obstn 1390' MSL 42°01'23"N, 84°14'48"W. Add obstn 1115' MSL 43°19'06"N, 84°36'55"W. Relocate Reed City RBN 43°54'N, 85°31'W to 43°57'34"N, 85°31'37"W. Add obstn 1040' MSL 41°54'11"N, 83°59'13"W. Add Waukegan RBN freq 379 Ident UGN class MHW 42°25'18"N, 87°52'W.

MINOT

42nd Edition, Sept. 16, 1965

Change freq 118.3 to 118.1 Grand Forks AFB Military Climh Corridor R-5402. Delete ctl twr freq 278 Rivers (RCAF).

MOBILE

57th Edition, July 22, 1965

Add obstn 600' MSL 31°08'11"N, 88°25'15"W. Add obstn 514' MSL 30°44'01"N, 88°29'36"W. Add obstn 563' MSL 30°44'40"N, 80°55'W. Add obstn 617' MSL 31°12'30"N, 85°23'10"W. Add obstn 627' MSL 31°54'21"N, 84°15'W. Delete R-2012A & R-2012B add R-2012 beginning at 30°42'N, 85°53'W to 30°43'10"N, 85°00'35"W to 30°08'30"N, 84°37'30"W to 29°58'15"N, 84°28'40"W to 29°44'N, 84°59'W to point of beginning. Designated altitude 700' to 5000' MSL. Time of designation 0000 to 1800 hrs CST Mon-Fri Important. 2300 feet of altitude continuously available for unrestricted flight through this area. When area is in use, USAF will only restrict 2,000 consecutive feet at any given time. Contact Tyndall RAPCON, Tallahassee Radio or Dothan Radio for usable altitudes (Dothan may be received on Marianna VOR). Add obstn 838' MSL 31°57'02"N, 86°38'11"W. Add obstn 496' MSL 31°35'45"N, 84°09'08"W.

MT. SHASTA

54th Edition, November 11, 1965

No hazardous changes.

MT. WHITNEY

55th Edition June 24, 1965

Delete McCarran ctl twr freq 278. Delete Bakersfield LFR leg 35°28'N, 119°03'W. Delete Walter arpt 36°20'N, 119°08'W. Delete Tonopah RBN 38°08'24"N, 117°05'05"W.

NASHVILLE

55th Edition, July 22, 1965

Delete Breckenridge AAF arpt & add aband symbol 37°41'N, 87°50'W. Delete Brentwood RBN 36°02'18"N, 86°43'02"W. Add obstn 615' MSL 37°08'57"N, 88°43'11"W. Relocate Nashville Rbn freq 304 Ident Bn class H-SAB/LOM from 30°08'N, 86°37'52"W to 30°02'18"N, 86°43'02"W. Add Crossville RBN freq 375 Ident CMA class MHW 35°58'06"N, 84°59'40"W. Add obstn 1650' MSL 30°02'04"N, 84°15'15"W. Add Marlon VOR freq 110.4 Ident MWA class L-BVOR mag var 4°E 37°45'15"N, 80°00'42"W. Add Cape Girardeau VOR freq 112.0 Ident CGI class L-BVOR mag var 4°E 37°13'38"N, 89°34'20"W. Add ctl zone 5 mi radius Cape Girardeau Muni arpt 37°13'32"N, 89°34'13"W with NE & SW extns. Add Marlon III ctl zone 5 mi radius Williamson Co. arpt 37°45'15"N, 89°00'40"W with NE & SW extns.

NEW ORLEANS

58th Edition, Sept. 16, 1965

Add obstn 441' MSL 29°33'34"N, 89°48'04"W.

NEW YORK

63rd Edition, October 14, 1965

Change Fort Tilden RBN freq 294 to 260. Delete UNICOM Caldwell-Wright arpt 40°52'N, 74°17'W. Add obstn 960' MSL 40°10'55"N, 76°08'28"W. Delete Macarilo arpt 40°04'N, 75°33'W. Add obstn 450' MSL 40°59'36"N, 72°10'10"W.

NORFOLK

57th Edition, Sept. 16, 1965

Delete note "Voice on 317" from Rocky Mount VOR box. Add obstn 1047' MSL 35°53'59"N, 76°20'52"W. Add obstn 466' MSL 37°52'N, 77°03'30"W.

OKLAHOMA CITY

58th Edition, November 11, 1965

No hazardous changes.

ORLANDO

54th Edition, November 11, 1965

No hazardous changes.

•PHOENIX

53rd Edition, July 22, 1965

Add obstn 1066' MSL 32°53'N, 112°43'30''W.

•POCATELLO

50th Edition, October 14, 1965

Delete Burley LFR 42°34'39''N, 113°43'55''W.

•PORTLAND

53rd Edition, July 22, 1965

Change Woodland FM code • • — — — — to — — — — 45°58'N, 122°39'W. Add obstn 5707' MSL 44°26'12''N, 120°57'12''W. Delete Olinger arpt 45°24'N, 123°123'01'W. Add cti zone 5 mi radius Corvallis arpt 44°29'50''N, 123°17'10''W. Add airway V448 direct from Portland to Yakima (039° Portland). Change Portland-Troutdale cti twr freq 362.8 to 241.0. Delete The Dalles LFR 45°37'12''N, 121°05'59''W. In northern border delete Toledo LFR leg box and type.

•PRESCOTT

44th Edition, Sept. 16, 1965

No hazardous changes.

•RAPID CITY

42nd Edition, June 24, 1965

Delete awy bcn site #34 45°12'N, 107°35'W. Delete awy bcn site #24 code • • • • 44°00'35''N, 106°26'00''W. Delete Sheridan RBn 44°45'08''N, 106°56'41''W. Delete Dickinson LFR 40°49'42''N, 102°47'24''W. Twr comsnd Rapid City Muni arpt freqs 118.7 & 257.8 twr operates 0800 to 2200 dally 44°02'35''N, 103°03'26''W.

•RENO

44th Edition June 24, 1965

Delete Lovelock RBn 40°06'N, 118°06'W. Delete awy bcn site #28A code — • • • 40°05'N, 118°11'W. Delete awy bcn site #17 code — • • 38°29'N, 120°02'W. Delete Tonopah RBn 38°06'24''N, 117°05'05''W.

•ROSWELL

53rd Edition, June 24, 1965

Add obstn 3738' MSL 33°16'10''N, 102°24'48''W. Add obstn 8663' MSL 82°53'02''N, 102°37'52''W. Delete Lubbock LFR 83°39'N, 102°02'W. Add obstn 3122' MSL 32°04'10''N, 102°01'46''W. Add obstn 3810' MSL 33°09'12''N, 102°16'44''W. Add obstn 4005' MSL 33°10'36''N, 102°51'21''W.

•SACRAMENTO

54th Edition, June 24, 1965

Delete Donner Summit RBn 39°19'N, 120°20'W. Delete Red Bluff LFR 40°07'N, 122°00'W. Add NAPA arpt cti zone 8 mi radius 39°12'55''N, 122°16'45''W. Delete awy bcn site #17 code — • • 38°29'N, 120°02'W. Add

Red Bluff RBn freq 338 Ident RBI. class SABH 40°07'N, 122°14'W. Add cti zone 5 mi radius Chico arpt 39°47'45''N, 121°51'25''W with NW extsn. Twr comsnd Napa Co. freqs 118.8 & 257.8. Delete Colusa arpt 39°12'N, 122°01'W. Add Marysville VOR freq 110.8 Ident MYV class T-BVOR mag var 18°E 39°05'55''N, 121°34'18''W. Delete Oakland Intl cti twr freq 341. Delete Marysville RBn 39°05'49''N, 121°33'57''W. Add Chico VOR freq 100.8 Ident CIC class LBVOR mag var 18°E 39°47'24''N, 121°50'46''W.

•SALINA

53rd Edition, Sept. 16, 1965

Add obstn 1174' MSL 39°52'20''N, 98°37'56''W. Add obstn 3762' MSL 38°52'25''N, 101°45'W.

•SALT LAKE CITY

51st Edition, May 27, 1965

Add Vernal arpt cti zone 5 mi radius with S extsn 40°26'30''N, 109°30'50''W. Add Vernal VOR freq 108.2 Ident VEL class T-BVOR MV 15°E 40°22'43''N, 100°28'28''W. Delete Malad City LFR legs 42°13'N, 112°20'W. Delete Fort Bridger RBn 41°24'N, 110°22'W. Delete Point of Rocks FM 41°40'N, 108°44'W. Delete UNICOM Thiokol arpt 41°43'N, 112°27'W. Add airway V187W direct from Rock Springs to Vernal from Vernal to Grand Junction (329° M Grand Junction). Realign airway V26 direct from Vernal to Cherokee (212° M Cherokee). In northern border delete Burley LFR leg box and type.

•SAN ANTONIO

56th Edition, June 24, 1965

Delete Richards Ranch arpt 29°59'N, 97°05'W. Add obstn 2049' MSL 29°16'11''N, 98°15'31''W. Add obstn 323' MSL 29°17'32''N, 94°47'06''W. Delete Bay City arpt 29°00'N, 95°56'W. Delete Pearland RBn 29°31'40''N, 95°14'13''W. Delete Hedrick arpt 29°29'N, 98°23'W.

•SAN DIEGO

58th Edition, August 19, 1965

Delete UNICOM Borrego Valley San Diego Co. 33°15'N, 116°19'W. Delete MCAS El Toro cti twr freq 142.74. Twr comsnd Riverside arpt freqs 121.0 and 257.8. Twr comsnd Montgomery arpt freqs 119.2 and 257.8. Change Santa Monica Mun cti twr freq 120.3 to 120.1. Add obstn 655' MSL 32°51'38''N, 116°58'06''W. Change Yuma Intl cti tfr freq 119.1 to 119.3. Add restricted areas R-2306A & R-2306B adj W of area R-2308A aprxly 15 mi wide and 30 mi in length. Delete Desert Ironwoods arpt 33°04'N, 116°11'W. Delete McKim arpt 32°51'N, 115°27'W. Delete Rough Acres Ranch arpt 32°42'N, 116°16'W. Delete Sargent arpt 33°36'N, 114°36'W. Delete Urshan arpt 32°37'N, 116°44'W. Delete MCAF Santa Ana cti twr freq 142.74.

●SAN FRANCISCO

57th Edition, June 24, 1965

Delete awy bcn site #12 code ● ● — 34°50'N, 120°15'W. Change Monterey Peninsula ctl twr freq 340.2 to 257.8. Twr comand Modesto arpt freq 120.0 and 257.8. Delete awy bcn site #29 37°00'N, 121°17'W. Delete Oakland Intl ctl twr freq 341. Delete San Jose Muni ctl twr freq 248. Delete Weir arpt 35°11'N, 120°35'W. Delete Northside arpt 34°50'N, 120°27'W.

●SAVANNAH

58th Edition, Sept. 16, 1965

Add obstn 620' MSL 32°52'40"N, 82°31'30"W. Add obstn 385' MSL 33°53'50"N, 79°27'14"W. Add obstn 337' MSL 32°16'39"N, 81°15'40"W. Add obstn 668' MSL 32°51'08"N, 81°52'20"W. Add obstn 745' MSL 33°23'27"N, 82°05'53"W.

●SEATTLE

57th Edition, June 24, 1965

Delete awy bcn site #2 code ● ● — 47°27'07"N, 121°48'10"W. Delete awy bcn site #4 code ● ● ● 47°22'13"N, 121°25'12"W. Delete awy bcn site #6 code — ● — 47°11'38"N, 121°01'41"W. Delete awy bcn site #5A code ● — ● 47°17'06"N, 121°15'25"W. Change Seattle-Tacoma Intl ctl twr freq 360.8 to 240.8. Delete Ellensburg LFR 47°00'50"N, 120°29'02"W. Delete Ephrata LFR 47°14'17"N, 118°30'48"W. Change Woodland FM code ● ● — — — to — — — 45°58'N, 122°39'W. Delete Yakima ctl twr freq 278. Delete Toledo LFR 46°30'N, 122°44'W. Delete Hobart FM 47°25'N, 120°50'W. Add airway V448 direct from Yakima to Portland (221° Yakima). In southern border delete The Dalles LFR leg box and type.

SEATTLE LOCAL CHART

37th Edition, June 24, 1965

Revise Tacoma Industrial ctl zone by deleting one mile from east side of the zone to exclude Tacoma arpt.

●SHREVEPORT

49th Edition, June 24, 1965

Add obstn 855' MSL 32°57'38"N, 95°18'32"W. Delete El Dorado RBn 33°13'N, 92°48'W. Delete Premier arpt & add aband symbol 32°30'N, 94°40'W. Delete Shreveport LFR & add Shreveport RBn freq 230 Ident SHV class SBH 32°34'11"N, 93°45'37"W. Delete Shreveport Downtown ctl twr freq 272. Add obstn 1105' MSL 30°29'23"N, 91°33'09"W. Add obstn 063' MSL 33°25'01"N, 94°08'19"W. Add obstn 1012' MSL 32°20'34"N, 95°15'24"W. Add obstn 2040' MSL 32°11'45"N, 92°04'05"W.

●SIOUX CITY

42nd Edition, November 11, 1965

No hazardous changes.

●SPOKANE

51st Edition, June 24, 1965

Delete awy bcn site #25 code ● — ● 47°37'21"N, 110°50'24"W. Delete awy bcn site #28 code — ● ● ● 47°34'00"N, 116°25'54"W. Delete awy bcn site #28A code — ● ● ● 46°42'51"N, 117°53'00"W. Delete awy bcn site #29 code — — ● 46°58'21"N, 117°48'06"W. Delete awy bcn site #33 code ● ● ● — 47°20'24"N, 117°30'00"W. Delete awy bcn site #30 code — — 47°29'35"N, 115°55'37"W. Delete Ephrata LFR 47°14'17"N, 118°30'48"W. Delete Ellensburg LFR 47°00'56"N, 120°29'02"W. Delete awy bcn site #38A code — ● — 47°11'N, 114°54'W. Delete awy bcn site #35 code ● — ● 47°17'N, 115°03'W. Delete awy bcn site #32 47°23'N, 115°30'W. Delete Mullan Pass RBn 47°27'18"N, 115°40'30"W. Delete Pine City RBn 47°14'57"N, 117°38'00"W. Delete Alberton FM 47°00'N, 114°25'W. Delete awy bcn site #38 code — ● ● ● 47°01'45"N, 114°28'06"W. Twr comand Walla Walla City County arpt freqs 118.5 & 236.6 46°05'41"N, 118°17'12"W twr operates 1500 to 0700 Mon-Fri; AAS all other times. Add Larson FM code — — 47°06'57"N, 118°18'24"W. Delete Quincy Valley arpt 47°12'08"N, 110°40'42"W. Delete Missoula County ctl twr freq 278.

●TRINIDAD

42nd Edition, Sept. 16, 1965

Change Cimarron VOR freq 111.2 to 116.4. Delete awy bcn site #45 code ● — ● 37°03'N, 104°20'W. Delete UNICOM Espanola Valley 36°02'N, 106°03'W.

●TULSA

56th Edition, October 14, 1965

Add obstn 1250' MSL 37°56'50"N, 94°14'22"W. Add obstn 1340' MSL 37°20'50"N, 94°50'35"W.

●TWIN CITIES

51st Edition, November 11, 1965

No hazardous changes.

●WASHINGTON

62nd Edition, October 14, 1965

Delete Macario arpt 40°04'N, 75°33'W.

●WICHITA

54th Edition, June 24, 1965

Add obstn 3850' MSL 36°45'35"N, 101°54'15"W. Delete Metcalf arpt 36°40'N, 98°08'W. Add Bartlesville, Okla. ctl zone 5 mi radius of Phillips arpt 36°45'45"N, 00°00'30"W with N extn excluding area N of 36°46'00"N & E of 95°58'30"W. Add obstn 1840' MSL 36°30'07"N, 97°54'40"W. Add Stillwater VOR freq 108.4 Ident SWO class T-BVOR mag var 9° E 36°13'15"N, 97°04'42"W. Change Liberal VOR freq 116.6 to 112.3. Add obstn 1732' MSL 30°47'06"N, 98°33'08"W. Add obstn 2390' MSL 36°50'43"N, 99°06'42"W.

WILLISTON

39th Edition, July 22, 1965

No hazardous changes.

YELLOWSTONE PARK

42nd Edition, Sept. 16, 1965

No hazardous changes.

WINSTON-SALEM

56th Edition, October 14, 1965

No hazardous changes.

RESTRICTIONS TO ENROUTE NAVIGATION AIDS

Radio Facility Restrictions are cited until cancelled by the Associated Station.

ALABAMA

MOBILE, BROOKLEY AFB VORTAC: VORTAC unusable beyond 30 mi below 2,000' MSL.

ARIZONA

BUCKEYE VORTAC: VOR unusable below 7000' MSL beyond 40 nmi 320-345°.

COCHISE VORTAC: VORTAC unusable beyond 40 nmi below 12,500' MSL; 175-240°, 090-145° below 10,500' MSL 040-090°. Below 14,000' MSL 360-040°.

PEACH SPRINGS VORTAC: VORTAC unusable below 10,000' MSL beyond 40 nmi from 195-230°.

PHOENIX VORTAC: VORTAC unusable beyond 10 nmi below 10,000' MSL 152-185° and 200-210° and beyond 6 nmi below 7000' MSL 078-125°.

PRESCOTT RDO: VORTAC unusable beyond 40 nmi below 11,000' MSL 145-155° and 175-200°; below 17,000' MSL 200-225°; below 12,000' MSL 225-235° account crs roughness. VOR excessive crs vagaries within 30 nmi from FL 240 thru 410 rely on To-From indicator for stn passage. Disregard VOR momentary excursion of crs 055° thru 070° 14 to 18 nmi all alts due terrain reflections.

SAN SIMON VORTAC: VORTAC unusable beyond 40 nmi below 15,000' MSL 145-190°; below 14,000' MSL 180-255°; below 10,500' MSL 350-145°.

TUCSON VORTAC: TACAN unusable beyond 6 nmi below 14,500 MSL 240-295° account crs roughness. VORTAC unusable beyond 40 nmi below 15,000' MSL from 320-045°; below 16,500' MSL 045-065°; below 15,000' MSL 005-060°.

YUMA VORTAC: VORTAC unusable beyond 40 nmi below 6000' MSL 280-300°.

ARKANSAS

HOT SPRINGS VOR: VOR unusable beyond 20 mi below 3,500' MSL.

CALIFORNIA

AVENAL VORTAC: TACAN unusable beyond 40 nmi below 3000' MSL 320-065° below 4000' MSL, 005-095° below 4500' MSL, 005-125° below 8500' MSL, 125-170° below 7500' MSL, 170-198° below 7000' MSL, 195-230° below 8000' MSL, 230-305° below 8000' MSL.

BAKERSFIELD VORTAC: VOR portion 121° rad V23E to Arvin Int unusable below 4000'.

BLYTHE VORTAC: VORTAC unusable beyond 40 nmi below 8000' MSL, 324-018° below 9000' MSL 180-217°, below 10,000' MSL 175-180°, below 15,000' MSL 277-324°.

BIG SUR VORTAC: TACAN portion of VORTAC unusable beyond 40 nmi below 8000' MSL 085-120° below 7000' MSL 120-130° below 6000' MSL 290-320° and below 9000' MSL 320-085°.

FILLMORE VORTAC: VORTAC unusable beyond 40 nmi 13,000' and below 280-290° and 14,000' and below 290-350°.

FRESNO VORTAC: TACAN portion of VORTAC unusable below 4000' MSL 200-250°.

GLENDALE RBN: H facil unusable beyond 2 mi from 320-005° and from 130-235°.

GOFFS VOR: VOR unusable beyond 40 nmi below 11,000' MSL 265-200° and 15,000' MSL 290-310°.

GORMAN VORTAC: VORTAC unusable beyond 40 nmi below 15,000' MSL 265-310° below 10,500' MSL 350-040°; below 5500' MSL 125-155°; below 10,500' MSL 155-170° below 14,500' MSL 170-219°; below 31,000' MSL 219-250°; below 25,000' MSL 250-265°.

LOS ANGELES ARTCC: En route radar service avbl 100 nmi radius Las Vegas VORTAC except unavailable V8N from 25 miles S Mormon Mesa VORTAC to Mormon Mesa VORTAC V21 from 20 miles S Mormon Mesa VORTAC to Los Angeles/Salt Lake City boundary. V8 from 15 miles S Mormon Mesa VORTAC to Los Angeles/Salt Lake City boundary. V21E from Mormon Mesa VORTAC to Los Angeles/Salt Lake City boundary. V503 from Craters Intersection to Los Angeles/Salt Lake City boundary. J9/J107, FL 180-230 inclusive from 30 miles north Boulder VOR to Los Angeles/Salt Lake City boundary. J60, FL 180-230 incl, from 55 miles N Boulder VOR to Los Angeles/Salt Lake City boundary. J11 FL 180-230 incl, from 50 miles S Bryce Canyon VORTAC to Los Angeles/Salt Lake City boundary. J02 FL 180-230 incl, from 35 miles W Boulder VOR to Los Angeles/Salt Lake City boundary.

LOS ANGELES VORTAC: VORTAC unusable beyond 40 nmi below 6000' MSL from 135-180°, below 7000' MSL from 268-290°. V-201 011° rad beyond 20 nmi below 9000' MSL. DME portion unusable beyond 40 nmi below 3500' MSL from 180-210°.

LOS BANOS VOR: VOR unusable below 8000' MSL beyond 7 nmi from 235-265°.

NAPA VORTAC: TACAN unusable beyond 40 nmi below 7500' from 280-045°.

NEEDLES VORTAC: VORTAC unusable below 11,500' MSL beyond 40 nmi from 170 to 220°.

OAKLAND RBN: H facil unusable beyond 25 nmi 094-124°.

OAKLAND VORTAC: TACAN unusable beyond 20 nmi below 3700' MSL 045-330°; below 4500' MSL 330-045°; beyond 40 nmi below 5000' MSL 060-320°, below 6000' MSL 320-340°, below 7000' MSL 340-355°, below 8000' MSL 355-005°, below 9000' MSL 005-060°.

ONTARIO VOR: VOR unusable below 14,500' MSL beyond 40 nmi from 200 to 140°.

PALMDALE VORTAC: VOR unusable beyond 40 nmi below 14,000' MSL 110-180°. TACAN unusable below 14,000' MSL beyond 40 nmi from 110-170° below 13,000' MSL beyond 40 nmi from 170-220° below 11,000' MSL beyond 40 nmi from 220-235°.

PALM SPRINGS VOR: VOR unusable beyond 40 nmi below 17,000' MSL 177-200° and 277-054°, below 16,000' MSL 054-092° below 15,000' MSL 158-177°, below 11,500' MSL 140-158°, below 11,000' MSL 259-277°, below 8000' MSL 092-140°, beyond 20 nmi below 13,000' MSL 200-259° acct reduced coverage.

PARKER VORTAC: VORTAC unusable beyond 40 nmi below 24,000' MSL 100-135°; below 14,500' MSL 135-150°.

POINT REYES VOR: VOR unusable beyond 40 nmi below 5000' and 50 nmi below 6000' btn 140-220°.

POMONA VOR: VOR unusable beyond 37 nmi on the 073° rad and beyond 40 nmi below 14,500' MSL 270-330° below 18,000' MSL 330-360° below 22,000' MSL 360-035° below 14,500' MSL 035-045° below 8000' MSL 070-140° below 7000' MSL 140-270°.

PORTERVILLE VOR: VOR unusable beyond 40 nmi below 4000' MSL from 065 to 180°.

RED BLUFF VORTAC: VOR unusable below 3500' MSL 280-300°.

RIVERSIDE VOR: VOR unusable beyond 15 nmi below 14,500' MSL 000-100°; beyond 30 nmi below 9000' MSL 100-235°, below 6500' MSL 235-290°, below 13,500' MSL 290-330°, below 10,500' MSL 330-035° below 13,500' MSL 035-060°.

RIVERSIDE, MARCH AFB VOR: USAF VOR unusable beyond 40 nmi below 14,000' from 015-035° and below 16,000' from 060-080°.

SALINAS VORTAC: VORTAC unusable beyond 20 nmi 010 thru 080° at MOCA and beyond 30 nmi 150 thru 210° at MOCA.

SAN DIEGO VORTAC: VOR unusable from 306-330° clockwise below 3800' MSL beyond 15 nmi acct crs roughness. TACAN unusable from 300-335° clockwise below 3800' MSL beyond 15 nmi acct roughness, unusable beyond 40 nmi below 5500' MSL 300-320°.

SAN FRANCISCO RBN: H facility (SIA) unusable beyond 15 mi from 130°-160° clockwise.

SAN JOSE VOR: VOR unusable beyond 20 nmi below 8000' MSL 360-040°; below 9000' MSL 040-070°; below 8000' MSL 070-110°; below 4000' MSL 110-130°; below 6000' MSL 130-280°; below 5000' MSL 280-300°.

SANTA ANA, EL TORO MCAS VOR: VOR (freq 111.0 mc) coverage restricted at and below 10,000' beyond 25 nmi from 300° clockwise to 070°.

SANTA MONICA VOR: VOR unusable beyond 40 nmi below 11,000' MSL 050-265°. Not certified within Warning Area 280.

SANTA ROSA VOR: VOR unusable beyond 40 nmi below 8000' MSL 340-030° and beyond 40 NM below 5000' MSL 080-120°.

SAUSALITO VORTAC: VORTAC unusable 300-313° beyond 10 mi below 12,000'.

THERMAL VORTAC: VORTAC unusable beyond 40 nmi 015-040°, 13,000' MSL; 060-040°, 12,000' MSL 060-085°, 8000' MSL; 150-200°, 15,000' MSL; 200-250°, 23,000' MSL; 350-015, 12,000' MSL.

TWENTY NINE PALMS VORTAC: VORTAC unusable 010-035°; 19,000'; 100-120°, 11,500'; 120-240° 10,500' beyond 4 nmi.

VAIL LAKE VOR: VOR unusable beyond 25 nmi below 18,000' from 140°-200°.

WOODSIDE VORTAC: VORTAC unusable below 5000' MSL beyond 30 nmi 190-260° and beyond 20 nmi 260-305°. VOR portion of VORTAC unusable beyond 18 nmi below 4000' 360-020°.

COLORADO

ALAMOSA VORTAC: VORTAC unusable beyond 40 nmi below 18,000' MSL from 025-045° and below 13,500' MSL 150-165°.

COLORADO SPRINGS VORTAC: VOR (PEF) unusable below 11,000' MSL, 320-020°; 10,000' MSL, 020-072°; 9000' MSL, 072-140°; 12,000' MSL, 190-220°; 16,500' MSL, 220-280°; 12,500' MSL, 280-320°, beyond 80 nmi due reduced coverage VORTAC (COS) unusable beyond 40 nmi below 15,200' MSL, 300-340°; below 14,300' MSL, 340-005°; below 13,200' MSL, 005-020°; below 12,100' MSL, 020-030°.

CORTEZ VOR: VOR unusable beyond 40 nmi below 14,000' MSL 190-230°.

CONNECTICUT

BRIDGEPORT VOR: VOR unusable following areas:

285-280° beyond 10 mi below 1,700' MSL; 290-305° beyond 6 mi below 1,700' MSL; and 315-340° beyond 20 mi below 2,200' MSL.

GROTON RBN: H facility unusable beyond 15 mi.

NEW HAVEN VOR: VOR unusable beyond 20 mi below 2,700' MSL.

DISTRICT OF COLUMBIA

WASHINGTON VOR: VOR unusable in the following areas: 010-030° beyond 20 mi below 8,000' MSL; 030-070° beyond 20 mi below 4,000' MSL; 070-180° beyond 15 mi below 3,500' MSL; 210-260° beyond 30 mi below 3,500' MSL; 260-300° beyond 20 mi below 4,500' MSL; 300-315° beyond 20 mi below 7,000' MSL; 340-010° beyond 20 mi below 5,000' MSL.

FLORIDA

GAINESVILLE VORTAC: DME portion of VORTAC unusable within 7 mi of station.

KEY WEST VOR: VOR unusable 095-245° and 275-340° beyond 15 mi below 14,500' MSL.

ORLANDO VORTAC: VOR rad 050-080° unusable below 5000' MSL beyond 15 NM.

GEORGIA

AUGUSTA VORTAC: VOR unusable 357-002°. Use Greenwood VOR 180° radial for V-185 between Augusta VORTAC and Greenwood VOR, MEA 2,300' MSL.

FULTON VOR: VOR unusable all areas except 220-280°.

WAYCROSS VORTAC: VOR unusable beyond 30 mi below 3,000' MSL.

IDAHO

BOISE VORTAC: VORTAC unusable beyond 40 nmi below 14,000' MSL 360-050°.

BURLEY VORTAC: VORTAC unusable beyond 40 nmi below 14,000' MSL from 130-140° and below 12,000' MSL from 140-150°.

LEWISTON VOR: VOR coverage 080° clockwise to 170° limited 30 mi at MSA.

MULLAN PASS VORTAC: VORTAC 40 nmi coverage at MOCA except unusable beyond 40 nmi below 11,000' MSL from 310-010° and from 200-230° and below 12,000' MSL from 290-310°.

POCATELLO VORTAC: VOR unusable beyond 40 nmi below 11,000' MSL from 060-085° and below 13,000' MSL from 085-120°.

TWIN FALLS VOR: VOR unusable beyond 40 nmi below 12,000' MSL 115-150°.

ILLINOIS

CHICAGO O'HARE VORTAC: VOR unusable 060-072°, 160-100°, 290-305° and 340-300°. DME unusable 004-014°, 135-150°, 285-315° and 340-350°.

CHICAGO HEIGHTS VORTAC: VOR unusable 330-350° beyond 20 mi below 8,000' MSL.

JOLIET VORTAC: VOR unusable 040-070° beyond 35 mi below 3,000' MSL.

PEOTONE VORTAC: VOR unusable 341-010° beyond 33 mi below 3,000' MSL.

INDIANA

BLOOMINGTON VOR: VOR unusable 025-045° beyond 30 mi below 4,000' MSL and 045-065° beyond 35 mi.

KNOX VOR: VOR unusable 045-135° beyond 37 mi.

IOWA

WATERLOO VORTAC: DME unusable 355-005° beyond 15 mi.

LOUISIANA

SHREVEPORT DOWNTOWN VOR: VOR unusable 070-100° and 180-280°.

MAINE

MILLINOCKET VORTAC: VOR unusable 330-340° beyond 35 mi below 6,000' MSL.

MARYLAND

FREDERICK VOR: VOR unusable below 2,000' beyond 25 nmi from 055-180°.

SNOW HILL VORTAC: VOR unusable following areas: 005-020° beyond 25 mi below 1,500' MSL; 210-225° beyond 20 mi below 1,300' MSL; and 315-005° beyond 12 mi below 1,500' MSL.

PATUXENT RIVER VOR: VOR unusable below 1,500' MSL beyond 35 mi 245-300°.

WESTMINSTER VOR: VOR unusable on 288° rad J-130 beyond 34 mi above 18,000'.

MASSACHUSETTS

BEDFORD VOR: VOR unusable 270-225° beyond 10 mi excluding published approach and transition and 225-270° beyond 7 mi.

BOSTON VORTAC: VOR unusable following areas: 300-045° beyond 36 mi below 7,500' MSL; 045-360° beyond 26 mi below 3,000' MSL; all other azimuths beyond 26 mi below 4,500' MSL and beyond 32 mi below 7,500' MSL.

WESTFIELD VOR: VOR unusable 270-320° beyond 35 mi below 4,000' MSL.

MICHIGAN

ALPENA TACAN: DME unusable 180-270° beyond 25 mi below 3,000' MSL.

ESCANABA VOR: VOR unusable 330-355° beyond 20 mi.

FLINT VORTAC: VORTAC unusable 300-320° beyond 6 mi below 10,000' MSL.

MARQUETTE VOR: VOR unusable in following areas: 200-335° beyond 25 mi below 2,000' MSL and 335-350° beyond 30 mi below 2,000' MSL.

MINNESOTA

DULUTH VORTAC: VOR unusable 168-208° between 6,000' and 18,000' MSL; beyond 30 mi above 18,000'.

FLYING CLOUD VOR: VOR unusable 242-255° below 5,000' MSL.

PARK RAPIDS VOR: VOR unusable following areas: 185-265° beyond 20 mi below 3,000' MSL; 265-185° beyond 20 mi below 3,000' MSL.

WINONA VOR: Unusable as en route IFR aid.

MISSOURI

JEFFERSON CITY VOR: VOR unusable beyond 20 NM 040-105° and 140-285°; unusable below 4,000' beyond 20 mi 285-040° and 105-140°; unusable below 4,000' 0-20 mi 040-105° and 140-285°.

MARYLAND HEIGHTS VORTAC: VOR unusable 150-210° beyond 35 mi below 3,500' MSL. DME unusable 150-215° beyond 30 mi below 3,500' MSL.

RIVERSIDE VOR: VOR unusable in following areas: 125-170°, 252-260° and 300-310° all distances and altitudes; all other azimuths beyond 15 mi below 2,400' MSL.

MONTANA

BOZEMAN VOR: VOR unusable 010-090° beyond 15 mi below 11,000' MSL.

BUTTE VOR: VOR unusable following areas: 005-120° beyond 15 mi below 10,000' MSL; and 120-325° beyond 15 mi below 11,000' MSL.

DILLON VORTAC: VORTAC unusable in following areas: 250-030° beyond 25 mi below 10,500' MSL, 030-250° beyond 25 mi below 12,000' MSL.

DRUMMOND VOR: Possible momentary flag activity on V2 nine miles E of Drummond VOR—verify station passage by TO/FROM indication.

GLASGOW AFB VOR: VOR unusable 235-245° beyond 10 mi below 8,800' MSL.

HELENA VORTAC: VORTAC unusable in following areas: 360-065° beyond 20 mi below 10,000' MSL; 005-090° beyond 25 mi below 11,000' MSL; 110-120° beyond 20 mi below 16,000' MSL; 120-240° beyond 20 mi below 10,000' MSL; 240-320° beyond 25 mi below 10,000' MSL.

MISSOULA VORTAC: VORTAC unusable in following areas: 345-060° beyond 15 mi; 060-085° beyond 31 mi below 12,000' MSL; 095-105° beyond 20 mi below 10,000' MSL; etc.

WHITEHALL VORTAC: VORTAC unusable in following areas: 360-040° beyond 30 mi below 14,500' MSL; 040-055° beyond 30 mi below 12,000' MSL, etc.

NEBRASKA

OMAHA RDO: All Omaha, Nebraska FSS transmitting frequencies except 118.3 mc unusable from 065-095° between 36-55 mi below 3,000' MSL.

NEVADA

BATTLE MOUNTAIN VORTAC: VOR unusable at MOCA beyond 35 nmi 055-000°; 15 nmi 115-105°; 15 nmi 255-285°.

BEATTY VORTAC: VOR restricted below 8000' beyond 27 nmi, 060-360°; below 10,000' beyond 10 nmi, 360-000°.

COALDALE VORTAC: VOR unusable beyond 25 nmi below 11,000' MSL 000-075°; beyond 15 nmi below 10,000' MSL 155-180°; beyond 25 nmi below 11,200' MSL 300-015° acct reduced coverage. DME unusable beyond 15 nmi below 14,000' MSL 005-075°; below 17,000' MSL 150-235°; below 10,000' MSL 320-330°.

CURRENT VOR: VOR unusable beyond 15 nmi at MOCA 005-025°; 25 nmi 060-155°; 35 nmi 245-260°; 30 nmi 260-290°; nmi 200-310°.

ELY VOR: VOR operg with following restrictions except on established airways and routes: unusable beyond 20 nmi below 11,500' MSL from 120-170° and 240-320°; below 14,000' MSL 170-220° and 320-340°; below 15,000' MSL from 220-240°; below 12,000' MSL from 340-010°; beyond 10 nmi below 13,000' MSL from 010-120°.

HAZEN VOR: VOR unusable 300-320° beyond 30 nmi below 9500'.

LAS VEGAS VORTAC: VORTAC unusable beyond 40 nmi below 9500' MSL from 190° to 220° below 12,500' MSL from 200° to 255°, below 14,500' MSL from 255° to 270°, below 16,000' MSL from 270-290°.

MINA VOR: VOR unusable below 11,000'.

MORMON MESA VORTAC: VORTAC unusable beyond 40 nmi below alts 12,000' MSL from 055 to 100°; 14,000' MSL from 100 to 110°; 17,000' MSL from 110 to 135°; 16,000' MSL from 285 to 340°.

RENO RBN: H facility unusable 170-270° beyond 20 nmi, 270-300° beyond 30 nmi and 300-010° beyond 23 nmi.

RENO VORTAC: VOR unusable 200-230° beyond 30 nmi below 13,000'. TACAN unusable below 14,500' beyond 30 nmi btn 210-230°.

SOD HOUSE VOR: VOR unusable below 13,500' MSL beyond 40 nmi from 020-075° and 220-235°.

SPARKS RBN: H facility unusable btn 175-185° beyond 18 nmi.

TONOPAH VORTAC: VOR unusable below 13,000' MSL beyond 40 nmi 005-030°.

WELLS VOR: VOR unusable beyond 40 nmi 18,000' MSL 005-030°; below 22,500, 185-210°; below 15,000, 335-350°; and below 12,000', 350-005°.

NEW HAMPSHIRE

KEENE VOR: VOR unusable 070-085° beyond 20 mi below 6,000'.

LEBANON VOR : VOR unusable 110-115° beyond 35 mi below 6,900' MSL.

NEW JERSEY

ATLANTIC CITY VORTAC: VOR unusable beyond 35 mi below 1,500' MSL.

ROBBINSVILLE VORTAC: VOR unusable 020-035° beyond 30 mi.

NEW MEXICO

CIMARRON VOR: VOR unusable 340-010° beyond 32 mi below 12,000' MSL.

CORONA VOR: VOR unusable 120-140° beyond 33 mi below 11,000' MSL.

GRANTS VORTAC: DME unusable beyond 20 mi below 11,000' MSL in the following areas: 175-210°, 315-360° and 011-035°; unusable 001-010° all distances and altitudes. VOR unusable following areas: 011-025° beyond 20 mi below 13,500' MSL; 150-175° beyond 30 mi below 10,500' MSL; 176-210° beyond 20 mi below 10,500' MSL; 240-265° beyond 11,000' MSL; unusable 001-010° all distnces and altitudes.

SANTA FE VORTAC: VOR and DME unusable 015-030° beyond 30 mi below 14,600' MSL.

NEW YORK

ALBANY VORTAC: VOR unusable 115-135° beyond 10 mi.

BINGHAMPTON RBN: Erratic ADF action 4-13 mi SSE of facility at 3,500' MSL.

CANARSIE VOR: VOR unusable 060-095° beyond 15 mi below 4,000' MSL.

DEER PARK VORTAC: VOR unusable following areas: 070-180° beyond 35 mi below 1,700' MSL; 180-240° beyond 30 mi below 1,700' MSL; 240-350° beyond 25 mi below 2,200' MSL; and 350-040° beyond 30 mi below 2,200' MSL.

DUNKIRK VOR: VOR unusable 120-180° beyond 22 mi below 4,000' MSL.

GENESE VORTAC: VOR and DME unusable below 3,500' MSL in following areas: 115-140° beyond 35 mi; 140-160° beyond 30 mi; 160-180° beyond 35 mi; 190-210° beyond 30 mi; and 210-215° beyond 35 mi.

GLENS FALLS VORTAC: DME unusable in following areas: 305-315° beyond 35 mi below 7,000'; 315-350° beyond 30 mi below 8,000'.

HAMPTON VORTAC: DME unusable following areas: 280-325° beyond 35 mi below 1,700' MSL; and 325-355° beyond 30 mi below 2,000' MSL.

HUGUENOT VORTAC: VOR unusable 210-230° beyond 20 mi below 6,500' MSL.

ITHACA VOR: VOR unusable 300-150° beyond 25 mi below 3,800' MSL.

KENNEDY VORTAC: VOR unusable below 1,500' MSL in the following areas: 015-030° beyond 30 mi; 030-045° beyond 26 mi; 060-075° beyond 24 mi; 075-100° beyond 30 mi; 100-150° beyond 26 mi; 150-165° beyond 30 mi; 165-215° beyond 30 mi; 215-270° beyond 26 mi; and 350-015° beyond 35 mi. VOR unusable below 2,000' MSL in following areas: 045-060° beyond 24 mi; 270-340° beyond 26 mi; and 340-350° beyond 30 mi.

KINGSTON VOR: VOR unusable 045-050° beyond 35 mi below 4,300' MSL and 070-140° beyond 30 mi below 3,400' MSL.

LAGUARDIA VOR: VOR unusable in following areas: 015-025° beyond 20 mi below 1,900' MSL; 025-045° beyond 35 mi below 2,700' MSL; 005-075° beyond 30 mi below 1,700' MSL; 075-135° beyond 25 mi below 1,700' MSL; 135-145° beyond 35 mi below 1,700' MSL; 165-205° beyond 15 mi below 1,700' MSL; 205-215° beyond 35 mi below 1,700' MSL; 215-220° beyond 30 mi below 1,700' MSL; 220-230° beyond 25 mi below 1,700' MSL; 230-240° beyond 30 mi below 1,700' MSL; 240-250° beyond 20 mi below 1,700' MSL; 250-260° beyond 10 mi below 2,500' MSL; 260-270° beyond 20 mi below

1,700' MSL; 270-285° beyond 25 mi below 1,800' MSL; 285-295° beyond 30 mi below 2,700' MSL; 295-305° beyond 35 mi below 2,700' MSL; 315-325° beyond 35 mi below 3,200' MSL; 325-005° beyond 25 mi below 2,700' MSL.

PLATTSBURG VORTAC: VOR and DME unusable 260-270° beyond 35 mi below 6,000' MSL.

ROCHESTER VOR: VOR unusable 045-065° beyond 12 mi.

NORTH CAROLINA

CHARLOTTE VORTAC: VOR unusable 360-055° except portion utilized for approach to Runway 18.

ELIZABETH CITY VOR: VOR unusable 026-042° and 082-100° all altitudes; 276-312° below 5,000' MSL. Use Franklin VOR 130° radial for V-472 between Franklin VORTAC and Elizabeth City VOR, MEA 2,500'.

GOLDSBORO, SEYMOUR-JOHNSON AFB VOR: VOR unusable 290-320° and 100-190°.

GREENSBORO VORTAC: VOR unusable 350-010° beyond 30 mi.

NORTH DAKOTA

DICKINSON VORTAC: VOR unusable 090-120° between FL 180 and FL 310 beyond 40 mi. GTF Center RADAR service available.

RED RIVER VOR: VOR rads 228 thru 250° unusable.

OHIO

AKRON VORTAC: VOR unusable 030-080°. For V72 use published YNG VOR rad from ACO to YNG. SW bnd determine station passage at ACO by TO/FROM indication above 2,500' MSL.

BELLAIRE VOR: VOR unusable 325-345° below 6000' MSL.

BRIGGS VORTAC: VOR unusable following areas: 330-010° and 120-145° all distances and altitudes; and 305-325° above 10,000' MSL.

MONTGOMERY VOR: VOR unusable in the following areas: 033-070°, 085-135°, 155-225°, 250-280° and 295-023°.

STRONGVILLE VOR: VOR unusable 080-200° beyond 35 mi.

OREGON

NEWPORT VORTAC: VORTAC coverage 40 nmi at MOCA excp unusable beyond 40 nmi below 8000' MSL 350-150°; 600' MSL 150-170°; 6000' MSL 320-350°.

NORTH BEND VOR: VOR unusable beyond 40 nmi below 6000' MSL from 340-065° and below 6500' MSL 065-190°.

PORTLAND VORTAC: VORTAC 332° rad and the DME on the same 332° rad unusable beyond 40 nmi at 6,000'.

REDMOND VORTAC: VORTAC unusable below 11,000' MSL 190-210°; below 13,000' MSL 210-240°.

ROSEBURG VOR: VOR coverage 40 nmi at MOCA excp 11,500' MSL 070-085°; above 12,500' MSL 100-125° beyond 35 nmi; 320° rad unusable beyond 35 nmi 12,500' MSL 085-125°; 10,500' MSL 125-130°; 6000' MSL 215-285°. Unusable below 7000' MSL.

PENNSYLVANIA

ALLENTOWN VORTAC: VOR unusable 020-060° beyond 26 mi below 3,500' MSL.

ALTOONA VOR: VOR unusable in the following areas: 070-100° beyond 18 mi below 3,500' MSL; 100-160°

beyond 30 mi below 3,500' MSL; 200-310° beyond 30 mi below 4,500' MSL; 310-350° beyond 15 mi all altitudes; 350-010° beyond 30 mi below 4,000' MSL.

BRADFORD VORTAC: VOR and DME unusable 145-150° beyond 15 mi.

BRADFORD RBN: H facility unusable 080-180° beyond 15 mi.

CARROLLTOWN VOR: VOR unusable 070-085° beyond 10 mi.

CLARION VOR: VOR unusable 215-223°.

HARRISBURG VORTAC: VOR unusable in following areas: 105-140° beyond 26 mi below 2,700' MSL; 140-165° beyond 30 mi below 2,600' MSL; and 195-230° beyond 26 mi below 2,800' MSL. DME unusable 325-300° beyond 30 mi below 3,500' MSL; and 360-025° beyond 35 mi below 2,900' MSL.

IMPERIAL VORTAC: VOR unusable 150-170° below 8,000' MSL and 345-360° below 14,500' MSL.

LANCASTER VOR: VOR unusable in following areas: 190-220° beyond 25 mi below 3,000' MSL; 220-250° beyond 25 mi below 4,000' MSL; 320-340° beyond 15 mi below 5,000' MSL; 320-340° beyond 25 mi below 6,000' MSL.

LATROBE VOR: VOR unusable beyond 20 mi.

SELINGSGROVE VORTAC: VOR unusable in following areas: 105-115° beyond 26 mi below 3,000' MSL; 210-230° beyond 35 mi below 2,500' MSL; and 250-285° beyond 26 mi below 3,400' MSL. DME unusable 100-115° beyond 30 mi below 3,000' MSL; 115-170° beyond 35 mi below 2,900' MSL; 190-300° beyond 85 mi below 3,500' MSL.

YARDLEY VORTAC: VOR unusable below 1,700' MSL following areas: 250-265° beyond 17 mi; 285-290° beyond 10 mi; and 280-290° beyond 17 mi. DME unusable 225-275° in following areas: Beyond 15 mi below 2,400' MSL and beyond 30 mi below 5,000' MSL.

RHODE ISLAND

PROVIDENCE VORTAC: VOR and DME unusable 220-310° beyond 30 mi below 3,000' MSL.

SOUTH CAROLINA

ALLENDALE VOR: VOR unusable on 171° radial beyond 20 mi below 4,500' MSL.

FLORENCE VORTAC: VOR unusable 360-010° beyond 20 mi.

MYRTLE BEACH VOR: VOR unusable 220-245° beyond 15 mi below 2,500' MSL.

SOUTH DAKOTA

MITCHELL VOR: VOR restricted to VFR use only UFN.

MOBRIDGE VOR: State owned and operated VOR operating 0700-1900, VFR use only. Class L-VOR. Freq: 108.6, rcvs 122.1. Ident MBG. Located lat 45°33'07", long 100°21'58".

TENNESSEE

HOLSTON MOUNTAIN VOR: VOR unusable 315-015° beyond 18 mi below 14,500' MSL.

TEXAS

AUSTIN VORTAC: VOR unusable 260-320° beyond 35 mi below 3,500' MSL.

BEAUMONT VOR: VOR unusable all quadrants except for 327° radial V-289 and 266° radial V-20N within 30 mi. VOR number 1 apch unusable.

EL PASO VORTAC: TACAN unusable 205-300° beyond 30 mi below 9,200' MSL.
FORT WORTH GREATER SOUTHWEST VORTAC: DME unusable beyond 30 mi below 4,000' MSL.
HOUSTON VORTAC: DME unusable 085-210° beyond 35 mi below 2,500' MSL.

UTAH

CEDAR CITY VOR: VOR unusable below 18,000' MSL beyond 30 nmi 090-125° and beyond 35 nmi 125-150°.
DELTA VORTAC: VOR unusable beyond 40 nmi below 16,000' MSL 040-080°.
HANKSVILLE VORTAC: VORTAC coverage restricted from 160 thru S to 100° 26 nmi at 14,000' MSL.
LA SAL VORTAC: VOR unusable below 18,000' MSL beyond 20 nmi from 330-005° and below 13,500' MSL beyond 40 nmi from 170-200°.
LUCIN VOR: VOR unusable beyond 40 nmi below 15,000' MSL 180-220°; below 12,000' MSL 280-310°; below 11,000' MSL 310-330°.
MILFORD VORTAC: VORTAC unusable beyond 17 nmi at MOCA, 025-115°, 30 nmi, 235-330° acct reduced coverage. Jet route 107 from Milford, Utah VORTAC to Rock Springs, Wyo VORTAC, continuous navigational signal coverage does not exist over the entire route segment below 28,000'. Moderate to hvy roughness over mountain ridges on 072° rad 10 nmi out.
OGDEN VORTAC: VORTAC unusable beyond 40 nmi below 21,000' MSL 360-055°; below 10,500' MSL 055 thru 075°; below 22,000' MSL 075 thru 130°.
PROVO VORTAC: VORTAC unusable beyond 40 nmi below 15,000' MSL 010-035°; below 10,000' MSL 035-050°; below 15,000' MSL 275-285°; below 14,000' MSL 285-295°. VR roughness exists over mountain ridges N thru E btm 15 and 20 nmi.
SALT LAKE CITY VORTAC: VORTAC unusable beyond 40 nmi below 19,000' MSL 010-020°; below 20,000' MSL 020-030°; below 23,000' MSL 030-060°; below 24,000' MSL 060-080°; below 19,000' MSL 080-095°; below 17,000' MSL 095-125°; below 10,000' MSL 125-140°; below 16,000' MSL 195-210°; below 10,000' MSL 280-290°; below 16,000' MSL 350-010°.
VERNAL VOR: VOR unusable below 14,000' MSL beyond 40 nmi from 220-200°.

VERMONT

BURLINGTON VOR: VOR unusable 080-155° beyond 30 mi below 9,000'.
MONTPELLER VOR: VOR unusable 205-280° beyond 30 mi below 7,000'.

VIRGINIA

BROOKE VORTAC: DME unusable 230-270° beyond 30 mi below 1,500' MSL.
HERNDON VORTAC: VOR unusable below 2,500' MSL in following areas: 050-075° beyond 30 mi; 075-095° beyond 20 mi; 105-120° beyond 35 mi; and 165-215° beyond 20 mi.
LAWRENCEVILLE VORTAC: VOR unusable 215-250° beyond 8 mi below 1,800' MSL and 215-270° between 14,500-18,000' MSL.
LINDEN VORTAC: DME unusable 140-180° beyond 25 mi below 3,500' MSL and 180-225° beyond 25 mi below 5,000' MSL.

MONTEBELLO VOR: VOR unusable 110-220° beyond 35 mi below 5,000' MSL.
WOODRUM VOR: VOR unusable 288-360° beyond 20 mi below 5,500' MSL.

WASHINGTON

BELLINGHAM RDO: Intermittent roughness may be observed on V-23 below 6000' MSL from 49 nmi thru 40 nmi S of VOR.
NEAH BAY RBN: H facil unusable 100-130° below 6500' MSL.
OLYMPIA VORTAC: VORTAC unusable below 7500' MSL at 40 nmi 210-260°. TACAN unusable below 15,000' MSL 260-270° at 40 nmi; below 9500' MSL at 35 nmi 270-280°. VOR 348° rad unusable below 4500' MSL.
PASCO VOR: VOR unusable below 6500' MSL beyond 40 nmi 150-210°; below 5500' MSL 210-270°. Coverage within R-6715 from 270-320° not fit checked.
PORT ANGELES VOR: VOR coverage 40 nmi; 220-110° at 7000'; 110-140° at 14,500'; 140-150° at 20,500'; 150-170° at 20,000'; 170-190° at 20,500; 190-220° at 10,000'.
SEATTLE VORTAC: VORTAC unusable beyond 15 nmi below 18,000' MSL from 158-165° beyond 20 nmi below 12,000' MSL from 305-355° except as published on airways and at intersections. J501 309° mag rad unusable beyond 15 nmi below 12,000' MSL and beyond 50 nmi below 18,000' MSL. Random VOR and TACAN needle oscillations possible on all radials. Changeover point on J501, 50 nmi from Seattle.
WALLA WALLA VOR: VOR coverage at 40 nmi restricted below 6000', 355-020° and 148-176°; below 7500' from 130-150°; below 10,500' from 020-060° and 110-130°; below 12,700' from 065-110°.
WENATCHEE VOR: VOR unusable beyond 20 nmi below 20,000' MSL 000-020° beyond 30 nmi below 20,000' MSL 020-075° beyond 40 nmi below 14,000' MSL 075-090° below 18,000' MSL 090-190° below 10,000' MSL 190-240°.

WEST VIRGINIA

BECKLEY VOR: VOR unusable 325-350° beyond 20 mi below 5,000' MSL excluding 335° radial at Montgomery Int.

WISCONSIN

LA CROSSE VOR: VOR unusable 100-150° and 230-000° beyond 20 mi below 3,300' MSL.
TIMMERMAN VOR: VOR unusable 300-310° beyond 35 mi below 3,400' MSL.

WYOMING

BOYSEN RESERVOIR VORTAC: VORTAC has momentary crs excursions and roughness all radials.
CASPER VORTAC: VORTAC operg with momentary cross pointer excursion on V-85 20-25 nmi S at and above MEA.
DUNOIR VOR: VOR restricted to awy rad use only.
SHERIDAN VORTAC: VORTAC unusable beyond 40 nmi below 17,000' MSL 160-175°; below 15,000' MSL 175-200° and below 16,500' MSL 200-230°.

VOR RECEIVER CHECK POINTS

The list of VOR airborne check points and ground check points is given on the following pages. Use of these Check Points is explained in Section I-4.

NOTE: The information is provided in the following order: Facility name (plus airport name, if needed); bearing in degrees magnetic from the VOR; location of the check point (distances in nautical miles); and altitude (in feet MSL, if any).

AIRBORNE

- Abilene, Tex. (Municipal):** 047°; 10.1 nmi silos in center of Ft. Phantom alternate for lgt acft 090° 9 nmi ctl twr and bcn.
- Alexandria, La. (England AFB):** 329°; over water tank.
- Alexandria, La. (Esler):** 152°; over hangar 3.6 nmi from VOR.
- Alexandria, Minn.:** 223.5°; over apch end of runway 22.
- Allendale, S.C.:** 342°; over N/S runway on Barnwell Co. Arpt.
- Anniston, Ala.:** 082°; in center of segmented circle, distance 9.5 nmi; 2000'.
- Appleton, Ohio:** 238°; over ctl twr Columbus, Ohio-Port Columbus Airport; 2500'.
- Asheville, N.C. (Mun):** 278°; over ctl twr 13.6 nmi from VOR; 3000'.
- Athens, Ga.:** 308°; 3 nmi over center of three rdo twrs.
- Augusta, Ga. (Bush Field):** 141°; directly over No. 17 of runway #17; 300'.
- Augusta, Mo. (State):** 257°; over Rbn 1.8 nmi from AUG VOR; 1500'.
- Austin, Tex. (Mueller Mun):** 178°; Freeway Int aprxly 0.9 nmi N of Mueller Mun Arpt.
- Bakersfield, Calif. (Meadows Fld):** 127°; over apch end runway 30; 1200'.
- Banger, Mo.:** 072°; over FSS Bldg., Old Town Arpt; 1000'.
- Bartlesville, Okla. (Phillips):** 161°; over Phillips oil tank—white ½ mi E of arpt trml.
- Baton Rouge, La. (Ryan):** 064°; over tank S side of arpt.
- Beatrice, Nebr.:** 360°; over RR at Princeton, Nebr.; 2500'.
- Beaumont, Tex. (Jefferson County):** 056°; water twr aprxly 0.4 mi NE of NE end of runway 2.
- Bellingham, Wash.:** 146°; N end of runway 16-34; 1000' MSL.
- Big Spring, Tex.:** 199°; over the rdo bcn; 1000' AGL.
- Blackstone, Va.:** 123°; beacon lgt Lawrenceville, Va. Arpt; 1500'.
- Bloomington, Ill. (Mun):** 080°; lctd 11 nmi NE of BMI VOR at railroad crossing river; 2000'.
- Boise, Idaho (Air Trml):** 086°; over dam outlet S end Lucky Peak Reservoir, 8.5 nmi from VOR; 5000'.
- Bozeman, Mont.:** 145°; over BZN rdo bcn; 5000'.
- Brainerd, Minn.:** 294° over centerline apch end runway 30; 1800'.
- Brownsville, Tex. (Rio Grande Valley Intl):** 244°; water twr in bldg area of arpt.
- Brownwood, Tex.:** 167°; over arpt bcn.
- Brunswick, Ga. (McKinnon):** 023°; at arpt rotating beacon.
- Burlington, Iowa:** 296°; over rdo twr 3 nmi NNW Burlington Arpt.
- Burlington, Vt. (Municipal):** 030°; over arpt control twr 4.4 nmi from VOR; 2000'.
- Butler, Mo.:** 058°; 7 nmi over Int E/W road and N/S railroad; 1500'.
- Butte, Mont.:** 084°; Intersection of runway 29-33; 6500'.
- Carleton, Mich. (Detroit-Wayne-Major):** 081°; the E/W and NW/SE runways SE of new ctl twr; 2200'.
- Casper, Wyo. (Air Trml):** 201°; over Intersection runways 21-25-30; 6300'.
- Centerville, Ill. (Mun):** 027°; at apch end of runway 86.
- Chadron, Nebr.:** 015°; railroad Intersection 1.5 nmi N arpt bndry; 4500'.
- Champaign, Ill.:** 176°; over grain elevator 8 nmi S at Pesotum, Ill.; 2000'.
- Cleveland, Ohio (Cleveland-Hopkins):** 079°; over Cleveland Rbn (H) distance 19.5 nmi; 1500'.
- Colorado Springs, Colo. (Peterson Fld):** 820°; over microwave twr, 6.8 nmi.
- Cohn Neck, N.J.:** 084°; over awy bcn twr at NE corner of Red Bank, N.J. Arpt.
- Columbus, Nebr.:** 079°; over grain elev Schuyler, Nebr.; 2500'.
- Concord, N.H. (Mun):** 192°; over rdo twr (old LFR) 5.0 nmi.
- Corpus Christi, Tex. (Intl):** 167°; over grain elevator 1 nmi E of arpt.
- Cortez, Colo.:** 196°; apch end runway 21; 7000'.
- Cotulla, Tex.:** 255°; rotating bcn on the Cotulla Intl Arpt.
- Crescent City, Calif. (McNamara Fld):** 104°; over Tank-farm E side of town; 1000'.
- Crestview, Fla.:** 106°; over rot bcn twr; 300'.

- Crossville, Tenn.** (Meml Arpt): 333°; 11 nmi over metal hangar.
- Cut Bank, Mont.** 311°; over center rnwy 31; 4800'.
- Daggett, Calif.**: 224°; over center twr LFR; 2500'.
- Danville, Ill.** (Vermillion Co.): 194°; Int of rnwys 21 and 17; 1700'.
- Dayton, Ohio** (Mun): 131°; over new trml bldg, 10.76 nmi; 2500'.
- Daytona Beach, Fla.** (Mun): 157°; over remote cld air/gnd facility antenna.
- Decatur, Ala.** (Pryor): 092°; over Intersection of rnwy and taxiway 236° from HSV; 1000'.
- Delta, Utah**: 349°; at apch end of rnwy 34; 4900'.
- Des Moines, Iowa**: 203°; over grain elev Cummings, Iowa; 2000'; 5.5 NM from VOR.
- Douglas, Ariz.** (Bisbee-Douglas Intl): 119°; over Intersection rnwy 12-30 and 17R-35L; 4700'.
- Dublin, Ga.** (Municipal): 007°; over SW end NE/SW rnwy.
- Dubois, Idaho** (Municipal): 335°; FAA Communications Bldg; 5200'.
- Eagle Lake, Tex.**: 181°; over center of football fld 0.5 nmi SW of Eagle Lake Arpt.
- El Dorado, Ark.** (Goodwin): 228°; trml bldg E side of arpt.
- Ellensburg, Wash.** (Bowers): 255°; center, W end of rnwy 7-25; 2300'.
- Emporia, Kans.**: 046°; over schoolhouse Neosho Rapids, Kans., 8.5 nmi 2500'.
- Ephrata, Wash.**: 200°; centerline, SW end of rnwy 2-20; 1500'.
- Evergreen, Ala.**: 100.7°; arpt bcn lgt twr lctd on Evergreen (Middleton) Arpt., 15.3 nmi from VOR.
- Forge, N.Dak.** (Hector): 300°; lctd apch end Hector Fld rnwy 35.
- Farmington, Mo.**: 195°; over center of Open Air Theater NE of the town of Fredericktown and 7.0 nmi from VOR; 2300'.
- Fayetteville, Ark.**: 183°; VORTAC; white circle on arpt; 2500'.
- Fayetteville, N.C.**: 239°; over water twr at Parktown, N.C. 8.0 nmi; 1200'.
- Filmore, Calif.**: 210°; at CAV rdo bcn 1800'.
- Findlay, Ohio**: 049°; over the Ohio Oil Company Admin Bldg at 2000'; aprxly 5 nmi from FDY VOR.
- Flint, Mich.** (Bishop): Pontiac VOR 332°; over apch end rnwy 9; 2200'.
- Flying Cloud, Minn.**: 349°; 4.5 nmi over smokestack at Glen Lake Sanatorium; 2000'.
- Fort Leonard Wood, Mo.** (Forney AAF): 351°; water twr N side E-W hvy dist 4.9 nmi from transmitter.
- Fort Smith, Ark.**: 232°; water tank at N edge of arpt; 1300'.
- Fortuna, Calif.**: 358°; over Intersection of rnwys Arcata Arpt; 500'.
- Fortuna, Calif.** (Rohnerville): 128°; over apch end of rnwy 11; 1400'.
- Fresno, Calif.** (Air Trml): 133°; over apch end rnwy 11; 500'.
- Fulton, Ga.**: 288° over water tank 2.4 NM NW side of arpt; 2000' MSL.
- Gage, Okla.**: 094°; over LFR; 3000'.
- Galveston, Tex.**: 110°; arpt terminal bldg.
- Garden City, Kans.**: 100°; Cimarron, Kans. at RR tracks and Main St.
- Gardner, Mass.**: 169°; hangar mrkd "WORCESTER" on roof, Worcester Arpt; 2000'.
- Gila Bend, Ariz.**: 193°; over apch end of rnwy 35 of Gila Bend Aux. Fld; 1500'.
- Goodland, Kans.** (Mun): 083°; over water twr NE edge of town of Brewster, Kans., 16 nmi; 4000'.
- Gordonsville, Va.**: 305°; over Intersection of rnwy and center trwy Charlottesville-Abermarle Arpt., 16 nmi from GVE-VOR; 2000'.
- Grand Forks, N. Dak.**: 315°; over Int N/S and E/W rnwys; 1900'.
- Grand Island, Nebr.**: 142°; over smoke stack 5.5 nmi from VOR; 3100'.
- Grand Junction, Colo.** (Walker Fld): 059°; Int rnwys 29 and 22; 6500'.
- Grants, N. Mex.**: 295°; in flt over FSS adj to rnwy; 7000'.
- Hallsville, Mo.**: 225°; 14 nmi Int of E/W and N/S rnwys over Columbia Mun Arpt., Mo.; 2000'.
- Harlingen, Tex.**: 149°; over rot bcn on Mun Arpt.
- Harrisburg, Pa.** (York State): 109°; over triangle formed by rnwys; 2000'.
- Hattiesburg, Miss.** (Mun): 149°; over water twr and rotating lgt bcn on arpt 10 nmi, 900'.
- Hayes Center, Neb.**: 258°; 28 nmi over center of town of Enders, Neb.; 4500'.
- Hibbing, Minn.**: 311°; over FSS Bldg; 2400'.
- Hickory, N.C.**: 225°; over end rnwy 24.
- Hill City, Kans.**: 057°; Hill City Arpt bcn lgt 23 nmi from the VOR.
- Hobart, Okla.**: 352°; centerline of N/S rnwy 100' above the elevation of the rnwy.
- Hobbs, N. Mex.** (Lea County): 030°; over circle on runup pad apch end rnwy 3.
- Hoquiam, Wash.** (Bowerman): 037°; W end and center rnwy 6; 500'.
- Houghton, Mich.** (County Mem'l): 241°; WHDF com. bdcst twr 3.5 nmi from VOR; 2100'.
- Houston, Mo.**: 042°; over Admin Bldg on E side of flt and 5.5 nmi from VOR; 1500'.
- Howa, La.**: 117°; over Intersection of rnwys 17-35 and 11-29.
- Houston, Tex.** (Andrau): 276°; arpt bcn on arpt; 500'.
- Houston, Tex.**: 099°; over Intersection of E/W trwy and parking ramp of Ellington Field.
- Huron, S. Dak.** ((Howes): 153°; lctd over HON/SBH; 2000'.
- Hutchinson, Kans.**: 032°; apch end rnwy 3 Hutchinson Mun Arpt.
- Imperial, Calif.**: 813°; apch end of rnwy 32; 200'.
- International Falls, Minn.**: 142°; RR bridge over stream of Ericsburg, Minn 5.4 nmi; 2200'.
- Jackson, Miss.** (Hawkins): 189°; over arpt Intersection of rnwys 11-29 and 34L-16R.
- Jackson, Tenn.** (McKellar): 287°; over bcn twr above arpt; 1000'.

- Janesville, Wis. (Rock Co. Arpt): 034°; over center of apch end of runway 04; 1600'.
- Jefferson City, Mo.: 123°; 9.1 NM over hwy bridge on Osage rvr; 2500' MSL.
- Joliet, Ill.: 102°; over centerline of NW end of NW/SE runway; 1500'.
- ^{*}Kearney, Nebr.: 215°; over rdo twr KGFW, 4.8 NM SW of arpt; 3000'.
- Keeler, Mich.: 268°; over intersection of N/S and E/W runways at Ross Fld, Benton Harbor, Mich.; 1600'.
- Kennebunk, Me.: 061°; over Portland Arpt control twr 18.5 nmi from Kennebunk VOR; 1500'.
- Kirkville, Mo.: 138°; over water twr at La Plata, Mo. (8.2 nmi from VOR).
- Kokomo, Ind.: 097°; over Int NW/SE and NE/SW runways Marlon Mun Arpt., Ind., 17.5 nmi from VOR; 1000'.
- La Crosse, Wis.: 321°; 5 nmi LFR; alt 1800'.
- Lafayette, Ind.: 135°; over Purdue Univ Stadium, 2100'.
- Lake Charles, La. (Mun): 253°; over rotating bcn on ctl twr, 6.2 nmi.
- Lamoni, Iowa (Lamoni): 041°; over hwy "Y" 1 nmi W of Leon, Iowa.
- Laredo, Tex.: 315°; over arpt bcn 9.5 DME.
- Laurel, Miss. (Municipal): 025°; over water twr and rotating lgt bcn on arpt. 17.5 nmi from HBG VOR, 800'.
- Lewistown, Mont.: 072°; above center of runway 7; 5200'.
- Lexington, Ky. (Blue Grass): 305°; arpt ctl twr 7.6 nmi from LEX VOR; 2500'.
- Liberal, Kans.: 058°; elevator 8.5 nmi NE Liberal, Kans. along Railroad.
- Litchfield, Mich.: 051°; NE/SW runway Reynolds Fld, Jackson, Mich.; 2000'.
- Livingston, Mont.: 189°; over ant of Livingston "H" facility; 5700'.
- London, Ky.: 027°; trnl bldg 3.7 nmi from LOZ VOR; 2500'.
- Lufkin, Tex.: 328°; rotating bcn on Angelina Co. Arpt.
- Macon, Ga. (Mun): 246°; 4.0 nmi from VOR over water tank; 2000'.
- Malden, Me.: 349°; RR crossing 0.5 nmi E of Dexter, Mo.
- Manchester, N.H. (Grenier Fld-Manchester Mun): 341°; over former USAF arpt ctl twr E side 17-35 runway. 5.0 nmi; 1500'.
- Marion, Ill.: 274°; Int runways 6-24 and 18-36 at Southern Arpt; 12 NM W; 1000'.
- Marquette, Mich.: 120°; 5.5 nmi over NW tip of Pelesler Lake; 2000'.
- Marshall, Mo. (Meml): 321° BWR; over MHL VORTAC Bldg; 2000'.
- Marysville, Calif. (Yuba County): 067°; Intersection of runways; 1500'.
- Massena, N.Y. (Richards): 207°; Admin Bldg; 1500'.
- McComb, Miss. (Pike County): 248°; revolving arpt bcn.
- Medford, Oreg.: 212° (VOR); over rdo twr, 4.8 nmi 3000'.
- Merced, Calif.: 280°; (Castle VOR); over end runway 30; 650'.
- Midland, Tex. (Alr Trnl): 170°; over apch ends of runways 22 and 28; 1000'.
- Millinocket, Me. (Mun): 317°; over FSS Bldg; 1500'.
- Minneapolis, Minn. (Crystal Arpt): 166°; over apch end runway 13L 4.9 nmi VORTAC; 1500' nmi.
- Minot, N. Dak.: 241°; apch end runway 26; 1800'.
- Montebello, Va. (Preston Glenn near Lynchburg, Va.): 182°; Intersection all runways; 2500'.
- Montgomery, Ala. (Dannelly): 319°; over water twr, distance 6.1 nmi from VORTAC.
- Muskegon, Mich. (County): 250°; over Muskegon LFR; 1500'.
- Myrtle Beach, S.C. 061°; over apch end runway 5 Crescent Beach Arpt.; 500'.
- Naperville, Ill.: 328°; over RR underpass lctd ½ nmi NE of the DuPage County Arpt; 2000'.
- Nashville, Tenn.: 242°; WSM rdo twr near Brentwood, Tenn., 10.2 nmi from VOR.
- Neola, Iowa: 047°; over grain elevator Harlan, Iowa; 2500'.
- Neesha, Mo.: 843°; center triangle formed by the intersection of 3 runways of Joplin, Mo., Mun Arpt.
- Newbern, N.C.: 259°; Int of E/W runways Oak Grove (navy) arpt.
- New Orleans, La. (Lakefront Arpt): 091°; over Lakefront twr.
- Newton, Iowa: 142°; lctd apch end NW/SE runway.
- Norfolk, Nebr.: 095°; over racetrack town of Stanton, Nebr.; 2600'.
- North Bend, Oreg.: 254°; Intersection runway 22-31; 750'.
- North Platte, Nebr. (Lee Bird): 083°; over water twr Brady, Nebr.; 4000'.
- Oklahoma City, Okla. (Will Rogers): 100°; rdo bcn stn; 1800'.
- Oklahoma City, Okla. (Wiley Post): 041°; OKC VOR Int runways 17-35 and 12-30; 1800'.
- Omaha, Nebr. (Eppley Fld): 310°; centerline of SE end of NW/SE runway.
- O'Neill, Nebr.: 117°; at intersection of E/W road and the railroad ½ nmi SE of Inman, Nebr.
- Ontario, Calif. (Intl): 347°; over and parallel with trwy btn runway 21 and 25; 2300'.
- Oshkosh, Wis.: 017°; WOSH Commercial Bcst twr 3.5 nmi from VOR.
- Ottumwa, Iowa (Mun): 303°; Int of runways 32 and 22.
- Peck, Mich.: 163°; over apch end runway 3 on St. Clair Co. Arpt; 2200'.
- Phillip, S.D.: 156°; over 2712' twr 5 nmi from VOR; 3300'.
- Phoenix, Ariz.: 256°; centerline runway 8R-26L; 2800'.
- Picayune, Miss.: 140°; over rotating lgt bcn on arpt.
- Pinehurst, N.C.: 086°; over windsock on top of hangar at Southern Pines, Pinehurst-Southern Pines Arpt.
- Plainview, Tex. (Hale Co.): 024°; Intersection runways 4-22 and 12-30, 6 nmi from VOR; 4400'.
- Plattsburgh, N.Y.: 229°; arpt bcn Plattsburgh Arpt; 1500'.
- Pocatello, Idaho: 031° over Int or runway 21 and 25; 5450'.
- Portland, Oreg.: (Intl): 162°; Intersection 2 and discontinued 29; 1000'.

- Poughkeepsie, N.Y.:** 249°; arpt twr site at Dutchess County Arpt; 1500'.
- Prescott, Ariz.:** 124°; runway 3-21 and 12-30 intersection; 5500'.
- Prague Lake, Mo. (AFB):** 184°; Spragueville LFR site; 2000'.
- Princeton, Maine:** 163°; over int of runways, 9.63 nmi from VOR; 1000'.
- Pueblo Colo. (Pueblo Mem'l):** 294°; over KOAA TV twr, 5.4 nmi NW of arpt (twr lgt 6322' MSL).
- Quilman, Tex.:** 241°; water tank, town of Alba, Tex.
- Rawlins, Wyo. (Mun):** 065°; (Cherokee VOR), 17 nmi over FSS bldg on arpt; 7300'.
- Raymond, Nebr.:** 082°; over grain elevator at Waverly, Nebr., 9.8 nmi; 2500'.
- Red Bluff, Calif. (Mun):** 329°; over centerline runway 33; 500'.
- Rhineland, Wisc. (Dren Arpt):** 210°; over runway Int; 2500'.
- Riverhead, N.Y. (Brookhaven Arpt):** 170° VORTAC; 4.5 nmi over apch end of runway 16; 1500'.
- Roswell, N. Mex.:** 027°; over apch end runway 3; 400'.
- Royston, Ga.:** 067°; over intersection runways 5-23 and 17-35 at Anderson, S.C. Mun Arpt; 1250'.
- Russell, Kans.:** 091°; over water twr in center of town of Wilson, Kans.
- Sacramento, Calif.:** 015°; apch end runway 02; 100'.
- St. Joseph, Mo. (Rosecrans Mem'l):** 167°; centerline of the extreme N end of the N/S runway.
- Salt Lake City, Utah:** 159°; centerline runway 34L/10R entire length #1 Arpt; 4400'.
- Sansville, Ill.:** 064°; over int at runways 4-22 and 13-31 at Mt. Carmel Mun Arpt., Ill.; 1500'.
- Sault Ste. Marie, Mich. (Mun):** 336°; int E-W and NW/SE runways; 2100'.
- Sayre, Okla. (Mun):** 175°; over rot bcn twr; 3000'.
- Sheridan, Wyo. (County):** 122°; over center of apch end runway 13, distance 4.9 nmi; 4500' MSL.
- Shreveport, La. (Downtown):** 011.2°; over water tank N of arpt, distance 1.3 nmi.
- Shreveport, La. (Greater Shreveport):** 175°; over the Admin Bldg.
- Sinton, Tex.:** 818°; over bcn on fld 9.5 nmi CRP VORTAC.
- Southwick, S. Dak.:** 300°; on Hot Springs, S. Dak. Arpt at intersection E/W taxiway and N/S runway.
- South Boston, Va.:** 254°; over trml bldg Danville Mun Airport; 1500'.
- Spokane, Wash. (Intl):** 027°; center NE end runway 21; 2900'.
- Stevens Point, Wisc.:** 314°; over ant twr 5 nmi NW of VOR; 2500'.
- Stockton, Calif. (Mun):** 299°; over water twr adjt to S side of arpt; 1000'.
- Sulphur Springs, Tex.:** 229°; over awy bcn lgt on SE corner of arpt.
- Syracuse, N.Y. (Hancock Arpt):** 135°; over ctl twr 4.75 nmi from VORTAC; 2000'.
- Talladega, Ala.:** 029°; over Anniston, Ala. Arpt.
- Tallahassee, Fla. (Mun):** 241°; over twr on arpt.
- Terre Haute, Ind. (Hulman):** 229°; int of NE/SW and NW/SE runway; 2000'.
- Texarkana, Ark.:** 122°; over int runways 13-31 and 4-22; 1000'.
- Thibodaux, La.:** 117°; over intersection of runways 17-35 and 11-29 on Houma Mun Arpt.
- Thief River Falls, Minn.:** 124°; over RR & hwy crossing adj Hazel, Minn.; 2000'.
- Thurman, Colo.:** 351°; in flt over Akron VOR transmitter site; 5600'.
- Toccoa, Ga.:** 179°; over arpt bcn; 1500'.
- Topeka, Kans. (Phillip Billard):** 073°; at hwy intersection 1.5 nmi SE McLouth, Kans.
- Traverse City, Mich. (Municipal):** 342°; at intersection of the N/S-E/W runways; 1600'.
- Troy, Ill.:** 322°; over int of runways 17 and 11 at Civic Mem'l Arpt., Alton, Ill.; 1600'.
- Tucson, Ariz.:** 258°; main runway intersection; 2800'.
- Utica, N.Y. (Onelda Co.):** 319°; over ctl twr bldg; 11.93 nmi from BVOR; 1500'.
- Valdosta, Ga.:** 006°; over lgt bcn E side of arpt.
- Vandalia, Ill.:** 179°; centerline at N end N/S runway.
- Vienna, Ga. (VORTAC):** 228°; over center of NE/SW runway, Cordele, Ga., Arpt.
- Waterloo, Iowa:** 127°; 8 mi over center twr KWWL broadcast stn; 2000'.
- Waterville, Ohio:** 181°; over Admin Bldg University Arpt., Bowling Green, Ohio aprxly 4.0 NM from VWV VOR; 2000'.
- West Point, Ind. (VORTAC):** 036°; over int of runways Purdue Univ Arpt; 2000'.
- Wichita, Kans.:** 161°; centerline of NW end of NW/SE runway.
- Wichita Falls, Tex. (Sheppard AFB/Wichita Falls Air Trml):** 011°; at bridge over Red River 8 nmi N of Sheppard AFB; 1500'.
- Wilkes Barre, Pa.:** 243°; ctl twr, Wilkes Barre-Scranton Arpt; 3000'.
- Williston, N. Dak. (Sioulin Fld):** 121°; apch end runway 11; 2600'.
- Willmar, Minn.:** 289°; over twr at Pennock, Minn.; 2200'.
- Wilmington, N.C. (New Hanover Co.):** 204°; over wea radar ant on arpt 5.5 nmi; 1000'.
- Wink, Tex. (Winkler Co.):** 149°; over int runway 22 and 13 5.9 nmi VOR; 3818'.
- Winner, S.D. (Mun):** 201°; over center of race track 0.5 nmi.
- Winona, Minn.:** 102°; over orange and white transmission line twr N bank of Mississippi River 3.8 nmi from VOR; 1600'.
- Winslow, Ariz.:** 106°; intersection runways 4-11; 5100'.
- Winston-Salem, N.C.:** 205° (GSO VOR); over ctl twr.
- Worland, Wyo. (Municipal):** 010° Boysen Reservoir VORTAC; over taxi strip between Trml Bldg and runway 16-34; 5200'.
- Worthington, Minn.:** 047°; over grain elev at Brewster, Minn.; 2800'.
- Yakima, Wash.:** 246°; intersection N/S and E/W runways; 1600'.
- Yankton, S.D.:** 256°; 7 nmi over twr; 2500'.
- Yuma, Ariz. (MCAS/Yuma Intl):** 106°; centerline runway 17-35; 400'.

VOR RECEIVER CHECK POINTS

AIM-Nov. 11, 1965

GROUND

- Aberdeen, S. Dak.** (Sully Co.): 294°; midway and center of N/S taxi strip leading from S edge ramp on E side of taxi strip.
- Aberry, Ga.** 142°; center of tie down area on N edge of ramp.
- Alexandria, La.** (Euler Fld): 151°; 35 mi in front Admin Bldg.
- Altoona, Pa.** (Altoona-Beckley-Easton): 178°; on runway 17 near the intersection of runway 24.
- Amarillo, Tex.** (AFB MUN): 200°; lctd 965' SE of centerline on NE end of the NE SW taxiway.
- Amarillo, Tex.** (Terrell Arpt): 092°; S end on curve of taxiway 99 W apch end runway 35 centerline.
- Anderson, S.C.** (Muni): 068°; on ramp in front of trml bldg.
- Anderson, Ohio.** (Muni): 042°; adj to NW end NW/SE taxiway.
- Atlantic City, N.J.** (Pomona): NAPEC: Lctn #1—313°; on ramp pad at apch end runway 13, 250' from centerline runway 13-31. Lctn #2—290°; on runup pad at apch end runway 4, 500' from centerline runway 4-22. Lctn #3—266°; on ramp pad at apch end runway 35, 250' from centerline of runway 17-35. Lctn #4—121°; on ramp pad at apch end runway 31, 250' from centerline of runway 13-31.
- Baltimore, Md.** (Friendship Intl): Lctn #1—253°; centerline of runway 10-28 on old ramp pad. Lctn #2—280°; 400' N of centerline of runway 10-28 on runup pad.
- Bartonsville, Ohio.** (Phillips): Lctn #1—187°; S end parallel taxi strip. Lctn #2—198°; N end parallel taxi strip. Lctn #3—198°; opposite trml parallel taxi strip.
- Bloomington, Tex.** (Jefferson County): 061°; W edge of N end of parking ramp.
- Bonville, Minn.** 190°; SE corner of Trml ramp.
- Big Spring, Tex.** (Howard County): 140°; ctr of runup area to runway 12.
- Blings, Mont.** 077°; on E/W taxiway 100' W of runway 34 and E/W taxiway 12.
- Bohannon, N.Y.** (Broome County): 077°; 400' S of ctl twy on S ramp north.
- Brownsville, N. Dak.** 275°; N end ramp area just off apch end runway 12.
- Bryce, Calif.** (Riverside Co.): 048°; on ramp 500' in front of FSS Bldg.
- Burns, Idaho.** (Air Trml): 064°; center N/S taxiway between runways 28L-10R and 28R-10L on fld.
- Bowling Green, Ky.** (Bowling Green-Warren County): 022°; taxiway in front of Admin Bldg.
- Bristol, Tenn.** (Tri-City): 262°; SW end of ramp in front of trml bldg.
- Brownsville, Tex.** (Rio Grande Valley Intl): 248°; apch end runway 13L.
- Carlsbad, N. Mex.** 334°; immediately W of FSS and twr bldg on ramp.
- Cedar Rapids, Iowa:** 080°; runway runup pad apch end runway 13.
- Chattanooga, Tenn.** (Lovell): 332°; centerline S taxiway at point 175' NE of centerline runway 32.
- Cheyenne, Wyo.** 290°; on yellow line on taxi strip immediately SE or apch end runway 8.
- Chicago (West Chicago), Ill.** (Du Page Co.): 067°; 5.2 mi on SW corner of N parking ramp at int of taxiway to runway 15 and taxiway paralleling runway 15-33.
- Childress, Tex.** 353°; intersection of edge of ramp at center taxi strip.
- Cincinnati, Ohio:** (See Covington, Ky.).
- College Station, Tex.** 065°; on W edge of parking ramp on Easterwood Arpt.
- Columbia, S.C.** (Owens Fld): 022°; compass rose on parking ramp.
- Columbia, S.C.** (Muni): 332°; 6 NM E/W taxiway (parallels runway 10-28).
- Columbus, Ga.** (Muscogee Co.): 145°; pointed circle W end of main ramp area.
- Columbus, Miss.** (Lowndes County): 085°; at center taxiway between parking ramp and runway.
- Covington, Ky.** (Greater Cincinnati): 043°; runway 27 E of intersection runways 27 and 22.
- Cross City, Mo.** (Site 58, MEM-TPA): 298°; taxiway near wind indicator and rotating beacon light.
- Dalhousie, Tex.** 170°; SE corner of main ramp.
- Dallas, Tex.** (Addison): 159°; intersection of center and parallel taxiways.
- Danville, Va.** (Muni): 339°; S of trml bldg center of intersection of taxiway to runway 6 and taxiway to runway 2.
- Dickinson, N. Dak.** 182°; intersection of E/W taxiway and N/S taxiway.
- Dodge City, Kans.** 150°; center of NW end of NW/SE runway.
- Dodson Arpt, Ala.** 334°; on ramp in front of Admin Bldg.
- DeBakey, Iowa:** 332°; on ramp at Term. Bldg.
- Duluth, Minn.** 012°; center of intersection formed by taxi strips leading to runways 31 and 3 just off SE corner of ramp.
- Duncan, Ohio.** (Halliburton Fld): 328°; trml ramp.
- Dyersburg, Tenn.** 250°; intersection of ramp and center taxi strip.
- East Hartford, Conn.** (Rentschler): 347°; lctd at taxi strip near N side of ctl twr.
- Evu Claire, Wb.** 180°; center of concrete ramp 150' W of Arpt Opern Office.
- Elizabeth City, N.C.** (CGAS): Lctn #1—028°; lctd on taxiway leading from CG ramp.
- Elko, Nev.** 329°; on apron just off NE end of runway 5-23.
- Elmira, N.Y.** (Chemung County): 068°; midpoint of short taxi strip between runway 10 and 6 at W side of arpt, aprxly 188' S of C/L runway 10 and 374' N of C/L runway 6.
- Erle, Pa.** (Erle-Port Erle): 059°; taxiway apchg runway 6.
- Eugene, Oreg.** (Mahlon-Sweet): 068°; apch to apron immediately W of the Admin Bldg.
- Florence, S.C.** 235°; on taxiway W of the end of runway 18.
- Fort Benning, Ga.** (Lawson AAF): Lctn #1—021°; run up area on taxiway at apch end of runway 20. Lctn #2—010°; run up area on taxiway W ctl twr at intersection of runway 02-20 and 14-32. Lctn #3—055°; run up area on taxiway S of ctl twr at junction with runway 14. Lctd

- #4—130°; run up area on taxiway at apch end of runway 32.
- Fort Dodge, Iowa: 118°; 6.1 nmi from VOR on W edge of trml bldg.
- Ft. Lauderdale, Fla (Hollywood Intl Arpt): 120°; on ramp in front of Trml Bldg.
- Fort Myers, Fla. (Page): 172°; N side of Trml ramp.
- Fort Riley, Kans. (Marshall AAF): 030°; on SE corner of tie down area and taxiway apchg runway 4.
- Fort Rucker, Ala. (Calhoun AAF): Lctn #1—010°; run up area on taxiway apch end runway 13. Lctn #2—035°; NW of Int runway 13 and 18. Lctn #3—040°; run up area on taxiway Int runway 13 and 18. Lctn #4—050°; run up area on taxiway N of apch end runway 24. Lctn #5—063°; run up area on taxiway S apch end runway 24. Lctn #6—058°; run up area on taxiway at Int runway 24 and 36. Lctn #7—078°; run up area on taxiway W of apch end runway 36. Lctn #8—002°; on run up area taxiway N of apch end runway 6.
- Fort Stockton, Tex.: 116°; on ramp N of terminal.
- Goldboro, N.C. (Seymour Johnson AFB): 028°; run up pad at apch end runway 8.
- Great Falls, Mont. (Intl): #1—207°; Int NE/SW and E/W taxiways adjt to apch end runway 34; 2.4 mi. #2—027°; on NE/SW taxiway 100' SW runway 25; 3.0 mi.
- Green Bay, Wis. (Austin-Straubel): 141°; intersection of circular taxi strip, W of Admin Bldg., and taxi strip leading to intersection of S and SE runways.
- Greensboro, N.C.: 033°; Ramp in front of twr.
- Greenwood, Miss.: 060°; central taxiway adj to ramp.
- Greenwood, S.C. (County): 251° on taxiway apch end of runway 9.
- Gulfport, Miss.: 088°; on arpt.
- Harrison, Ark.: 131°; Int taxiway and ramp.
- Helena, Mont.: 235°; taxiway adj to apch end runway 26.
- Hobbs, N. Mex. (Lea County): 030°; on runup pad apch end runway 3.
- Holston Mountain, Tenn.: 282°; on ramp S of Term Bldg.
- Hot Springs, Ark.: 246°; run-up area short of apch end runway 5.
- Houston, Tex.: 292°; NW end runway 12.
- Hyannis, Mass. (Barnstable Mun): 243°; lctd on runway apron for runway 24.
- Idaho Falls, Idaho (Fanning Fld): 007°; junction of N/S taxiway and runway 16-34, at NE corner of arpt.
- Ithaca, N.Y. (Tompkins Co.): 202°; at bend in taxiway, 975' from centerline of NW/SE runway.
- Jamestown, N. Dak.: 258°; junction of taxi strip leading from hangar with SW taxi strip.
- Johnstown, Pa. (Cambria County): 155°; taxiway to runway 33.
- Junction, Tex. (Kimble County): 143°; N edge of parking ramp.
- Key West, Fla. (Boca Chica): 091°; W just N of apch end of runway 7.
- Key West, Fla. (Intl): 131°; NW portion of ramp.
- Kinston, N.C. (Stallings): 230°; 500' in front of Admin Bldg.
- Klamath Falls, Oreg.: 294°; 154' N of taxiway in front of Admin Bldg., and 36' from E edge of ramp.
- Lafayette, La.: Lctn #1—350°; on taxiway at N end N/S runway. Lctn #2—343°; on taxiway at S end N/S runway.
- La Grange, Ga.: 106°; on compass rose at taxi strip intersection aprxly 500' due S of Admin Bldg.
- Lancaster, Pa.: 277°; Intersection or ramp and taxiway leading to intersection of runways.
- Lansing, Mich. (Capital City): 053°; center of apch end runway 5.
- Laramie, Wyo. (Brees): 100°; on loading ramp.
- Laredo, Tex. (AFB): Lctn #1—137°; off end of ramp on taxiway 2, 4.8 nmi. Lctn #2—131°; off S end of ramp on taxiway 6, 4.0 nmi.
- Laredo, Tex.: 315°; on ramp adj to apch bcn.
- Las Vegas, Nev. (McCarran Fld): 351°; last taxiway W side apchg runway 10.
- Lawton, Okla.: 349°; on trml apron at the point intersecting the S taxi strip.
- Little Rock, Ark. (Adams): 314°; on taxi strip adj to junction runway 14.
- Longview, Tex. (Gregg Co): 126°; N end ramp on taxiway to runway 13.
- Louisville, Ky. (Bowman): 320°; taxiway W of runway 1.
- Louisville, Ky. (Standiford): 301°; taxiway between ramp and runway 10.
- Lubbock, Tex.: 103°; center of warm up pad for runway 17R.
- Lufkin, Tex.: (Angellina Co. Arpt): 328°; Intersection of ramp and taxiway in front of Trml Bldg.
- Mansfield, Ohio (Mun): 133°; at intersection of NW and SW taxiways.
- Marfa, Tex. (Alpine): 314°; 5 NM from VOR Intxn NW/SE—NE/SW taxiway, 450' E apch end runway 30.
- Marianna, Fla.: 310°; ESE end taxiway 6.
- Martinsburg, W. Va.: 281°; near apch end of runway 35.
- Mason City, Iowa: 356°; on centerline S end of N/S runway.
- McAlester, Okla. (Mun): 350°; taxistrip at terminal ramp.
- McAllen, Tex. (Miller Intl): Lctn #1—040°; at intersection E/W taxiway and N/S taxiway. Lctn #2—012°; in front airline trml on gate two loading spot.
- Melbourne, Fla. (Eau Gallie): 145°; 500' E of Term Bldg.
- Meridian, Miss. (Ky): 121°; from run up ramp for runway 23.
- Midland, Tex. (Alr Trml): Lctn #1—188°; center of warm up pad for runway 10. Lctn #2—178°; Int taxiway C and ramp in front of Trml Bldg.
- Minneapolis, Minn.: 036°; on taxiway leading to runway 30.
- Mineral Wells, Tex.: 307°; intersection of taxiway and NW runway.
- Missoula, Mont. (County): 340°; 5' from edge of ramp in front of Admin Bldg.
- Mobile, Ala. (Bates): 107°; Int of N/S and E/W taxiways E of runway 18-30. 109.5°; Int of W ramp and W taxiway.
- Monroe, La. (Selman): 033°; arpt ramp in front of twr structure adj to the taxiway leading to intersection of runways 17-35 & 4-22.
- Muscle Shoals, Ala.: 289°; eastern end of E/W runway 11-29 equal-distance from end and both sides of runway.
- Nantucket, Mass. (Memorial): 241°; taxiway apchg runway 24.

- Needles, Calif. (Site 25B, LAX-AMA): 253°; on ramp in front of Admin Bldg.
- New Bern, N.C.: 088°; on compass rose at ramp.
- New Orleans Int'l, La. (Moliant Fld): 235°; center of perimeter taxiway 100' S of runway 10.
- Norfolk, Va. (Mun): 031°; center of taxiway "E", 250' NW of centerline of runway 22.
- Oakland, Calif. (Metro-Oakland Int'l): 081°; middle of pad between runways 27L and 27R.
- Olympia, Wash.: 347°; on ramp in front of Admin Bldg.
- Orlando, Fla. (Herndon): 300°; midpoint of N/S taxiway on W boundary of airport.
- Paducah, Ky. (Barkley): 040°; on taxiway approach end of runway 22.
- Palacios, Tex.: 118°; intersection NW end NW/SE runway and S taxiway strip.
- Panama City, Fla. (Bay Co. Arpt): 185°; N/S taxiway 1050' N of Term bldg.
- Paris, Tex. (Cox Fld): 348°; intersection of N/S and E/W taxiways.
- Parkersburg, W. Va. (Wood County): Lctn #1—209°; run-up area N side of runway 28. Lctn #2—207°; on taxiway near intersection runways 18 and 21.
- Pasco, Wash.: 020°; S of int of N/S taxiway and runway 20L.
- Paseo Robles, Calif.: 248°; 150' S of Admin Bldg on parking ramp, indicated by circle and sign.
- Pecos, Tex. (Mun): 133°; on ramp adj to center taxiway.
- Pellston, Mich. (Emmet Co.): 239°; intersection of centerlines of N/S runway and E/W taxiway of airport.
- Pendleton, Oreg.: 078°; 200' W of Admin Bldg.
- Peoria, Ill. (Greater Peoria): 088°; at SW corner of service ramp E side of fld.
- Philadelphia, Pa. (North Philadelphia): 215°; on taxi strip between ramp and runway 10.
- Phillipsburg, Pa. (Black Moshannon-State): 252°; runway intersection.
- Pierre, S. Dak.: 250°; in front of municipal hangar.
- Pine Bluff, Ark. (Grider): 179°; center taxiway at junction N/S runway.
- Poncha City, Okla.: 101°; taxi strip at junction to terminal ramp.
- Pontiac, Mich.: 114°; over circle on warmup pad approach end runway 27.
- Pueblo, Colo.: 244°; painted circle with arrow on ramp W of Admin Bldg.
- Quincy, Ill. (Quincy-Baldwin Fld): 030° at intersection of NE/SW and NW/SE taxi strips N of terminal bldg.
- Raleigh, N.C.: 244°; end runway 5.
- Rapid City, S. Dak.: 320°; in front of Admin Bldg adj to center taxi strip.
- Raymond, Nebr. (Lincoln AFB/Mun): 174° run up pad of runway 35R along centerline of N/S taxiway.
- Redding, Calif. (Mun): 810°; intersection taxiway and runway 12.
- Redmond, Oreg.: 068°; on ramp in front of Admin Bldg 60' W of centerline of taxiway to runway 10-28.
- Reno, Nev.: 240°; lctd on concrete runup mat for runway 18.
- Riverton, Wyo. (Mun): 178°; taxiway between Admin Bldg and runway.
- Roanoke, Va. (Woodrum): 090°; filled area runway 27.
- Rochester, Minn.: 030°; of taxiway that enters approach end of runway 31.
- Rochester, N.Y. (Monroe Co.): 149°; on ramp in front of ctl tower 415' from centerline runway 1-10 and 305' from centerline of runway 7-25.
- Rock Springs, Wyo.: Lctn #1—266°; in center of turn-around E end runway 25. Lctn #2—261°; in center of turn-around W end runway 7.
- Rockford, Ill.: 112°; apex of taxiways at center of airport.
- Rocky Mount, N.C.: 263°; right 3 runway 33, marker.
- Rome, Ga. (Russell Fld): 348°; intersection of taxiways 200' S of the terminal bldg.
- Saginaw, Mich. (Tri-City): 280°; lctd on NE parking ramp 12' from field edge near center taxiway.
- St. Paul, Minn., (Downtown Arpt): 291°; over drain in center of int parking ramp and taxiway in front of terminal bldg.
- St. Petersburg, Fla. (Pinellas County Int'l): 255°; parking ramp 500' SE of ctl tower.
- St. Thomas, V.I. (Charlotte Amalie, Truman): 118°; on center point of airport taxiway on line 3 mi WNW.
- Salinas, Calif. (Mun): 257°; right shoulder runway 21, directly in front of terminal bldg.
- Salisbury, Md. (Salisbury-Wicomico County): 243°; ramp front of ctl tower.
- San Angelo, Tex. (Mathis): 236°; E edge of ramp in front of tower.
- San Antonio, Tex. (Stinson Mun): Lctn #1; 329R, run up area at approach end runway 9. Lctn #2; 335R, on W end ramp opposite hangars 1 and 2.
- San Jose, Calif. (Mun): 069°; in front of Fire and Rescue Bldg.
- San Juan, Puerto Rico (Int'l): 081°; lctd on taxiway NE terminal bldg.
- Santa Barbara, Calif.: 198°; gate 2 in front of terminal bldg over Figure 2 painted on apron.
- Santa Catalina, Calif.: 346°; SW corner approach end runway 4 Santa Catalina Arpt.
- Santa Rosa (Sonoma Co. Arpt): 083.5°; SW corner main ramp.
- Santa Fe, N. Mex. (New Municipal): 334°; at junction main intersection taxiway and ramp.
- Sarasota, Fla. (Bradenton): 172°; on ramp 800' N terminal bldg.
- Scottsbluff, Nebr. (Mun): 240°; NE edge ramp opposite terminal bldg and W of taxiway leading to runway 30 approx 3000' from approach end.
- Seattle, Wash. (Seattle-Tacoma Int'l): 028°; 80' near edge of ramp S and W of Admin Bldg.
- Sioux City, Iowa: 314°; painted circle directly in front of new tower.
- Sioux Falls, S. Dak.: 148°; in line with E edge of taxiway W of ctl tower, 75' S from N edge of parking ramp.
- Sonoma Co. Arpt.: 083.5°; SW corner of main ramp.
- South Bend, Ind. (St. Joseph Co.): 178°; center of western N/S taxiway 200' N of N edge of terminal ramp.
- Spartanburg, S.C. (Municipal): Lctn #1—182°; at compass rose on ramp.
- Springfield, Ill. (Capital): 214°; in front of tower at intersection NW/SE and NE/SW taxi strips.

Springfield, Mo.: 191°; at bend in N/S taxiway 400' S of N end of taxi strip.

Stinson, Tex. (Mun Arpt): Lctn #1, 329°; runup area at apch end runway 09. Lctn #2, 335°; on W end of ramp opposite hangars 1 and 2.

Thermal, Calif.: 328°; ramp 250' in front of hangar.

Topala, Kans. (Phillip Billard Arpt): 212°; N/S taxiway W of tetrahedron.

Truth or Consequences, N. Mex.: 155°; on SE/NW taxiway adj to wind cone.

Tucuman, N. Mex.: Lctn #1—255°; over square metal plate lctd on hangar ramp paved area. Lctn #2—268°; over painted orange circle, lctd on taxi strip 100' off end of runway 8.

Tuscaloosa, Ala. (Van De Graaff): 241°; point lctd on centerline of taxiway midway between ramp and runway.

Twin Falls, Idaho (Joslin): 030°; on parking strip apron 300' SW of Admin Bldg.

Vero Beach, Fla.: 112°; on taxiway adj to wind sock adj to runway 11-29.

Vicksy, Mo.: 241°; on center line of NE/SW runway 125' from NE end Rolla National Arpt.

Victoria, Tex. (Victoria Co.-Foster): 126°; apch end runway 13L.

Waco, Tex. (Mun): 132°; ramp N of terminal.

Walla Walla, Wash. (City-County): 025°; ctr of taxiway apch runway 20, mrd.

Walnut Ridge, Ark.: 051°; taxi strip at parking apron adj to tetrahedron.

Watertown, N.Y. (Mun): 049°; ramp in front of Admin. Bldg.

Watertown, S. Dak.: 184°; lctd SE corner of ramp near taxiway leading to runway 12-30.

Wausau, Wis. (Alexander): 338°; 100' N of wind tee, 30' from S edge of concrete trml ramp where concrete ramp terminates and blacktop ramp begins.

Wenatchee, Wash. (Pangborn Fld): 45°; front of Administration Bldg.

Westfield, Mass.: 304°; from center of compass rose lctd end of runway 15.

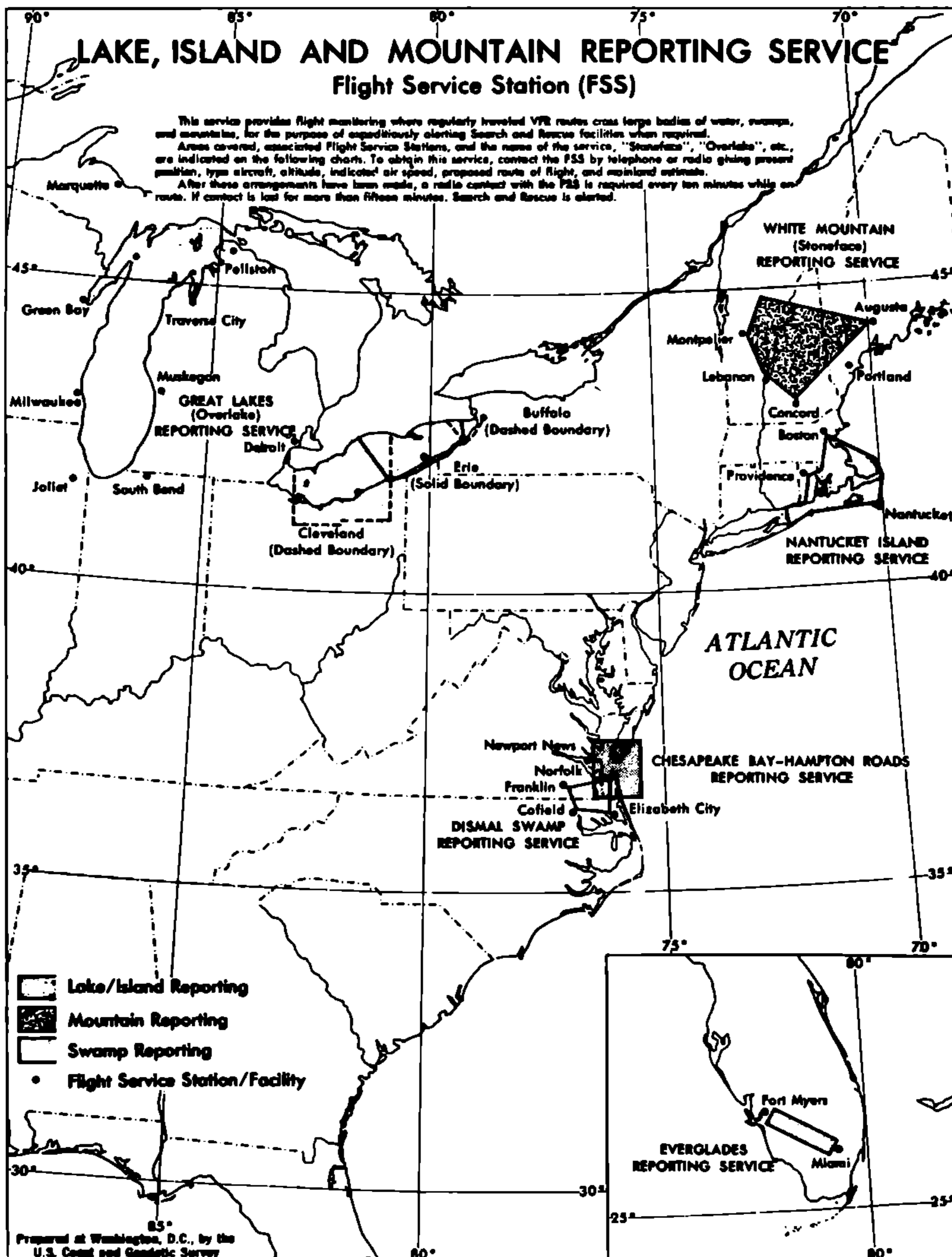
Wheeling, W. Va. (Wheeling-Ohio County): 219°; taxiway on E side of ramp.

Williamsport, Pa. (Williamsport-Lycoming Co.): 237°; vcnty of base operator ramp.

Woodring, Okla.: 348°; ramp W of Term. Bldg.

Youngtown, Ohio: 182° compass rose end of runway 18.

Zanesville, Ohio: 010°; on arpt 270' NE of intersection of NE/SW and NW/SE taxiways on centerline of NE/SW taxiway.



ROCKY MOUNTAIN REPORTING SERVICE

This service is available to aircraft operating VFR (with or without flight plan) between Denver and Grand Junction via Corona Pass or Monarch Pass. This service cannot be offered on an area or random route basis due to the unreliability of communications caused by terrain extremes. The routes via Corona Pass and Monarch Pass have been flight checked and communications found reliable at no less than the altitudes published on the chart.

"Rocky Mountain Reporting Service" shall be available to all VFR aircraft upon request, whether or not operating on a regular flight plan.

REQUIREMENTS

1. Aircraft must be equipped with functioning 2-way radio capable of receiving VOR and transmitting 122.1 mc.
2. Pilot must fly prescribed route at an altitude no less than established MRA (Minimum Reception Altitude).
3. Pilot must arrange for accurate time of departure to be received by the FAA facility through which the service was requested.

4. Pilot must radio a position report every ten minutes as follows, whether eastbound or westbound:

CORONA ROUTE

To Denver Radio while operating between Denver and Corona Pass (vicinity of Moffat Tunnel, west of Tolland, Colorado).

To Eagle Radio (through Kremmling VOR) between Corona Pass and vicinity of Glenwood Springs.

To Grand Junction Radio between vicinity of Glenwood Springs and Grand Junction.

MONARCH ROUTE

To Denver Radio (through Denver or Kiowa VOR) between Denver and Lake George Intersection (Cheesman Reservoir). To Denver Radio (through Kiowa VOR only) between the Intersection and Elevenmile Reservoir, or west of Cripple Creek, Colorado.

To Pueblo Radio between Elevenmile Reservoir or west of Cripple Creek and Salida, Colorado.

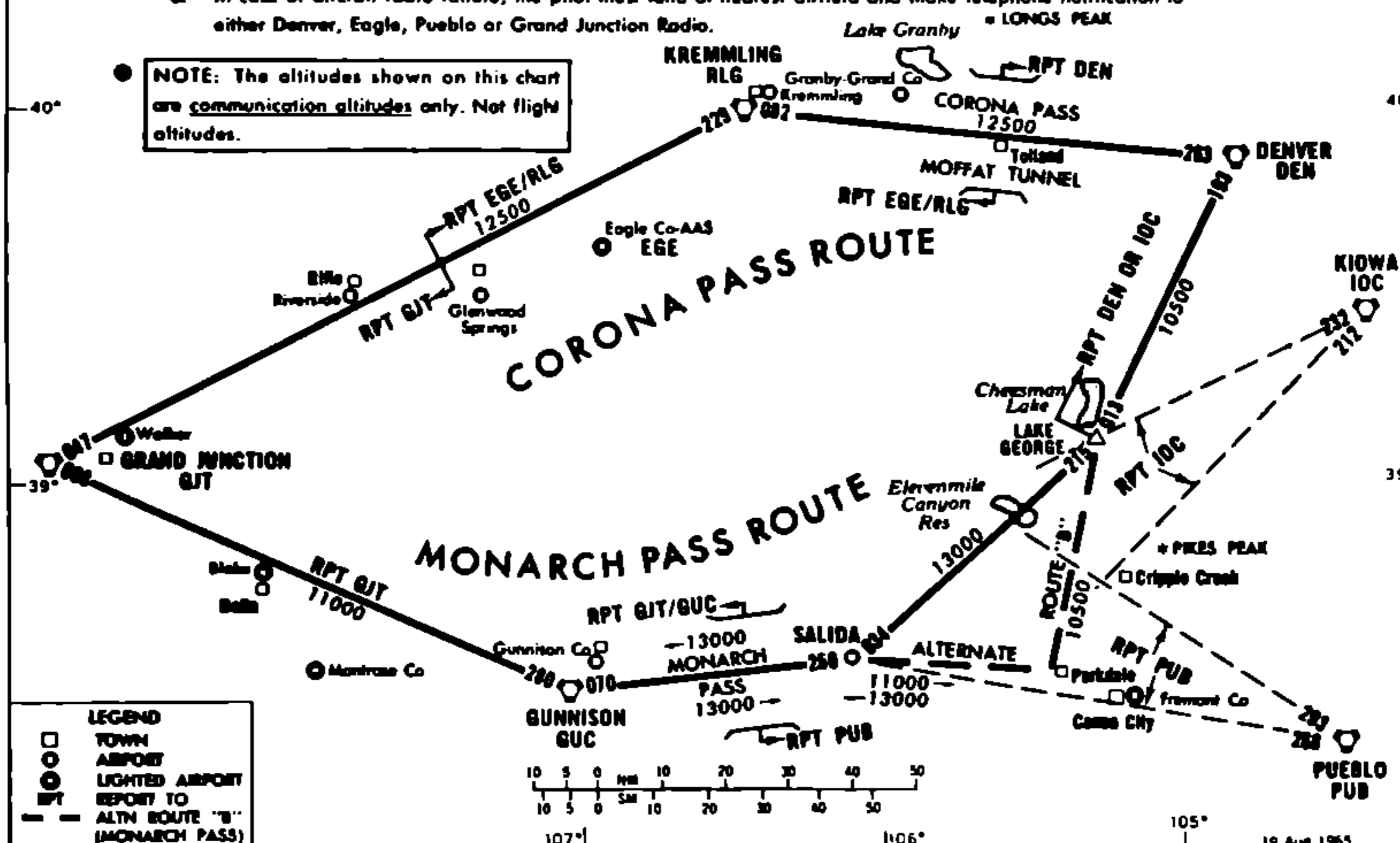
To Grand Junction Radio (through Gunnison VOR) between Salida and Grand Junction.

Pilots may file for all or any portion of either route, i.e. on a flight from Denver to Grand Junction, a pilot may request the service from Denver to Kremmling only.

(If contact with the aircraft is lost for more than 15 minutes, Search and Rescue will be alerted.)

5. The service may be terminated at any time upon request of the pilot.
6. In case of aircraft radio failure, the pilot must land at nearest airfield and make telephone notification to either Denver, Eagle, Pueblo or Grand Junction Radio.

NOTE: The altitudes shown on this chart are communication altitudes only. Not flight altitudes.



SPECIAL NOTICES

Special Notices of a general nature or universal application, and other than for a specific geographical location, are grouped together under General Notices. Special Notices pertinent to a specific geographic area are grouped together under Area Notices by state, then city, airport, or location within the state. The month and year the notice is initially inserted into the manual is provided at the conclusion of each Special Notice. A solid dot • prefixes new or revised Special Notices.

GENERAL NOTICES

MILITARY CLIMB CORRIDORS

ALL FLIGHTS desiring to traverse these areas must obtain prior approval from the Appropriate Authority and maintain continuous listening watch on the appropriate frequency while traversing the corridor. The list of corridors, appropriate authority and frequencies follows:

Corridor	Appropriate Authority	Frequencies
Bangor (Dow AFB) Maine	Dow AFB Apch Ctl	126.2 ; 363.8 ; 122.5G
Charleston AFB/Mun., S.C.	Charleston Apch Ctl	119.3 ; 319.8 ; 122.5G
Columbus (Lockbourne AFB), Ohio	Columbus Apch Ctl	123.7 ; 122.5G ; 360.8
Falmouth (Otis AFB), Mass.	Otis RAPCON	124.7 ; 118.2 ; 122.5G ; 127.7
Grand Forks (Grand Forks AFB), N.D.	Grand Forks AFB Apch Ctl	118.1 ; 122.5G
Hampton Roads (Langley AFB), Va.	Norfolk Apch Ctl	125.7 ; 122.5G
Holmstead AFB, Fla.	Miami Apch Ctl	118.1 ; 122.4G
Houston (Ellington AFB), Texas	Houston Apch Ctl	119.1 ; 122.5G
Limestone (Loring AFB), Me.	Loring AFB Apch Ctl	122.5G
Madison (Truax Fld), Wisc.	Truax Tower	120.1 ; 122.5G
Marquette Co. (K.I. Sawyer AFB), Mich. ...	Sawyer Apch Ctl	122.5G ; 119.1
Merced (Castle AFB), Calif.	Castle AFB Apch Ctl	118.9 ; 122.5G
Mt. Clemens (Selfridge AFB), Mich.	Selfridge AFB Apch Ctl	126.2 ; 122.5G
New Orleans (NAS New Orleans), La.	Houston Center—5000' & above, IFR	126.0
	New Orleans Apch Ctl—VFR ...	118.1 ; 122.7G
Oscoda (Wurtsmith AFB), Mich.	Wurtsmith AFB Apch Ctl	126.2 ; 122.5G
Oxnard AFB, Calif.	Oxnard Apch Ctl	124.7 ; 122.5G
Rome (Griffiss AFB), New York	Griffiss Apch Ctl	118.5 ; 122.5G
San Antonio (Kelly AFB), Tex.	San Antonio Apch Ctl	122.5G ; 120.9 ; 126.5 ; 134.1
San Rafael (Hamilton AFB), Calif.	Hamilton AFB Apch Ctl	122.5G ; 126.2
Sault Ste. Marie (Kincheloe AFB), Mich. ...	Kincheloe Apch Ctl	118.3 ; 122.5G ; 363.8
Victorville (George AFB), Calif.	Edwards Apch Ctl	118.6 ; 122.5G
Westhampton Beach (Suffolk AFB), N.Y. ...	Suffolk Apch Ctl	126.2 ; 122.5G
Wrightstown (McGuire AFB), N.J.	McGuire Apch Ctl	122.5G ; 125.8 ; 134.1 ; 126.2

T—Transmits

G—Guards

CIVIL USE OF MILITARY FIELDS:

U.S. Air Force, Navy and Coast Guard Fields are open to civil fliers only in emergency or with prior permission; Army Air Fields are open to civil aircraft on authorization of the Air Field Commander.

For Air Force Installations, prior permission should be requested at least 30 days prior to first intended landing from Headquarters USAF (AFOAPDA) via the Commanding Officer of the field concerned (who has authority to approve landing rights for certain categories of civil aircraft). For use of more than one Air Force Installation, requests should be forwarded direct to Hq USAF (AFOAPDA), Washington, D.C. 20330.

For Naval Installations, prior permission should be requested from the Chief of Naval Operations (OP 532) via the Commanding Officer of the field concerned (who has the authority to approve landing rights for certain categories of civil aircraft).

For Coast Guard fields prior permission should be requested from the Commandant, U.S. Coast Guard via the Commanding Officer of the field.

However, with minor exceptions, authority to use Air Force and Navy fields is granted only to aircraft on government business, or when no suitable civil airport is available in the vicinity. Use of Coast Guard fields is limited to persons on government business only when there is no suitable civil airport in the vicinity.

When instrument approaches are conducted by civil aircraft at military airports, they shall be conducted in accordance with the procedures and minimums approved by the military agency having jurisdiction over the airport.

December 1964

SELECTIVE CALLING SYSTEM (SELCAL) FACILITIES AVAILABLE

Location	Operating Agency	HF	VHF
Anchorage	FAA	X	
Balboa	FAA	X	
Cold Bay	FAA	X	
Dallas	BNF	X	
Guam	FAA	X	
Honolulu	ARINO	X	X
Miami	ARINO	X	X
New York	ARINC	X	X
New Orleans	ARINO	X	X
Okinawa	ARINO	X	X
Pago Pago	FAA	X	
Point Barrow	WEN	X	
San Francisco	ARINO	X	X
Shemya	FAA	X	
San Juan	ARINO	X	X
Seattle	ARINO	X	X
Wake Island	FAA	X	

December 1964

HEAVY TRAFFIC AROUND MILITARY FIELDS

Pilots are advised to exercise vigilance when in close proximity to most military airports. These airfields have an unusually heavy concentration of jet aircraft operating within a 25 nautical mile radius and from the surface to all altitudes. This precautionary note also applies to the larger civil airports. **BE ALERT, STAY ALIVE!**

December 1964

OMISSION OF POSITION REPORTS IN A RADAR ENVIRONMENT

Effective—December 9, 1965

1. When informed by ATC that their aircraft is in "RADAR CONTACT," pilots will discontinue position reports over compulsory reporting points, and monitor normal ATC communications frequencies.

NOTE.—Occasion may arise, when controllers will re-request pilots of radar identified aircraft to report a specific fix. In such cases, report only the specific fix requested.

2. When a radio frequency change is made, pilots should comply with the following initial contact procedure.

(name) CENTER/APPROACH CONTROL (aircraft identification); AT (altitude/flight level),
or

AT (altitude/Flight level) CLIMBING/DESCENDING TO MAINTAIN (altitude/flight level), OVER

3. When radar identified aircraft operating below flight level 180 are observed passing a compulsory reporting point, ATC will issue the appropriate altimeter setting associated with that point.

4. PILOTS SHOULD RESUME NORMAL POSITION REPORTING WHEN ATC ADVISES "RADAR CONTACT LOST" or "RADAR SERVICE TERMINATED."

● AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS)

Automatic Terminal Information Service (ATIS) is the continuous broadcast of recorded noncontrol information in selected high activity terminal areas. Its purpose is to improve controller effectiveness and to relieve frequency congestion by automating the repetitive transmission of essential but routine information.

Information such as ceiling, visibility, wind, altimeter, instrument approach, and runways in use is continuously broadcast on the voice feature of a TVOR/VOR/VORTAC located on or near the airport, or on a discrete VHF tower frequency. Pilots of aircraft arriving or departing the terminal area can receive the continuous ATIS broadcasts at times when cockpit duties are least pressing and listen to as many repeats as desired.

Sample Broadcast:

"THIS IS WASHINGTON NATIONAL AIRPORT INFORMATION BRAVO. CEILING MEASURED TWO THOUSAND, OVERCAST, VISIBILITY SIX, SMOKE. WIND ONE SIX ZERO DEGREES AT FIVE. ALTIMETER TWO NINER NINER TWO. VOR RUNWAY ONE FIVE APPROACH IN USE.

LANDING RUNWAY ONE EIGHT. DEPARTURES ON RUNWAY ONE FIVE. NOTAM, GEORGETOWN RADIO BEACON OUT OF SERVICE. INFORM WASHINGTON APPROACH OR GROUND CONTROL ON INITIAL CONTACT THAT YOU HAVE RECEIVED INFORMATION BRAVO."

Pilots hearing the ATIS broadcast should, on initial contact with the tower or approach control, repeat the specific phonetic alphabet code word (Alpha, Bravo, Charlie, etc.) appended to each ATIS message. This will indicate that the pilot has received the latest information and obviate the need for the controller to repeat the information.

Example: "... I HAVE RECEIVED INFORMATION BRAVO."

ATIS broadcasts will be updated when there is a significant change in information contained therein. Terminal controllers will issue pertinent information to pilots who do not acknowledge receipt of the ATIS message, or who acknowledge receipt by an alphabet code word which is not current.

Pilots are urged to cooperate in the ATIS program since it relieves frequency congestion on approach control, ground control and local control frequencies.

ATIS locations indicated in Section IV-A at these airports for which it is provided.

November 1965

FEDERAL AVIATION REGULATION 91.103

The provisions of FAR 91.103 will apply as follows:

Air traffic clearances to aircraft of Cuban registry not engaged in scheduled International Air Service in U.S. airspace will require that flight be conducted on one of the following routes and a landing be made at Kennedy International Airport. In the event alternates are necessary due to weather, such alternates will be Logan International Airport and Dulles International Airport in that order.

Flights from Montreal to Kennedy below FL 180 will be routed via V-282, V-208, V-91, V-475, DPK. Those at FL 180 and above will be routed via St. Eustache V-91, PLB, J-75, ALB, POU, V-91, V-475, DPK. Flights from Kennedy to Montreal below FL 180 will be routed via Sound Intersection, POU, V-487. Those at FL 180 and above will be routed via Sound Intersection, POU, ALB, J-75, PLB, V-91, St. Eustache.

Flights from Ottawa to Kennedy below FL 180 will be routed via MSS, V-208, ALB, V-91, V-475, DPK. Those at FL 180 and above will be routed via G-1 Maxville, V-104, MSS, J-87, ALB, POU, V-91, V-475, DPK. Flights from Kennedy to Ottawa below FL 180 will be routed via Sound Intersection, POU, V-91, ALB, V-208, MSS. Those at FL 180 and above will be routed via Sound Intersection, POU, ALB, J-87, MSS, V-104, Maxville, G-1.

Flights from Toronto to Kennedy below FL 180 will be routed via V-368, V-252, BGM, V-270, V-34, V-475, DPK. Those at FL 180 and above will be routed via

V-368, BUF, J-95, HUO, CMK, V-34, V-475, DPK. Flights from Kennedy to Toronto below FL 180 will be routed via HUO, V-126, AVP, V-34. Those at FL 180 and above will be routed via Northport Intersection, HUO, J-95, BUF, V-34.

All flights in both directions, between Kennedy and Cuba will be routed via the Tuna Intersection and the overwater Papa Route. These are the only routes which will be authorized. Reroutings which will traverse other U.S. airspace will not be authorized.

The procedures set forth herein will not apply at this time to overflights by aircraft of Cuban registry engaged in scheduled International Air Service. However, if circumstances subsequently warrant, a notam prescribing routes for such aircraft will be issued.

April 1965

AIRWAY/ROUTE COURSE CHANGES

1. Pilots of aircraft are required to adhere to airways/routes being flown. Special attention must be given to this requirement during course changes. Each course change consists of variables that make the technique applicable in each case a matter only the pilot can resolve. Some variables which must be considered are turn radii, wind effect, airspeed, degree of turn, and cockpit instrumentation. An early turn, as illustrated below, is one method of adhering to airways/routes. The use of any available cockpit instrumentation, such as distance measuring equipment, may be used by the pilot to lead his turn when making course changes. This is consistent with the intent of FAR 91.123 which requires pilots to operate along the centerline of an airway and along the direct course between navigational aids or fixes.

2. Turns which begin at or after fix passage may exceed airway/route boundaries. The following illustration contains an example flight track depicting this, together with an example of an early turn.



3. Without such actions, as leading a turn, aircraft operating in excess of 290 knots true airspeed (TAS) can exceed the normal airway/route boundaries depending on the amount of course change required, wind direction and velocity, the character of the turn fix (DME, overhead navigation aid, or intersection), and the pilot's technique in making a course change. For example, a flight operating at 17,000 feet MSL with a TAS of 400 knots, a 25 degree bank, and a course change of more than 40 degrees would exceed the width of the airway/route; i.e., 4 nautical miles each side of centerline. However, in the airspace below 18,000 feet MSL, operations in excess of 290 knots TAS are not prevalent.

and the provision of additional IFR separation in all course change situations for the occasional aircraft making a turn in excess of 200 knots TAS creates an unacceptable waste of airspace and imposes a penalty upon the preponderance of traffic which operate at low speeds. Consequently, the FAA expects pilots to lead turns and take other actions they consider necessary during course changes to adhere as closely as possible to the airways/route being flown.

4. Due to the high airspeeds used at 18,000 feet MSL and above, FAA provides additional IFR separation protection for course changes made at such altitude levels.

October 1965

SPECIAL FEDERAL AVIATION REGULATION NO. 15

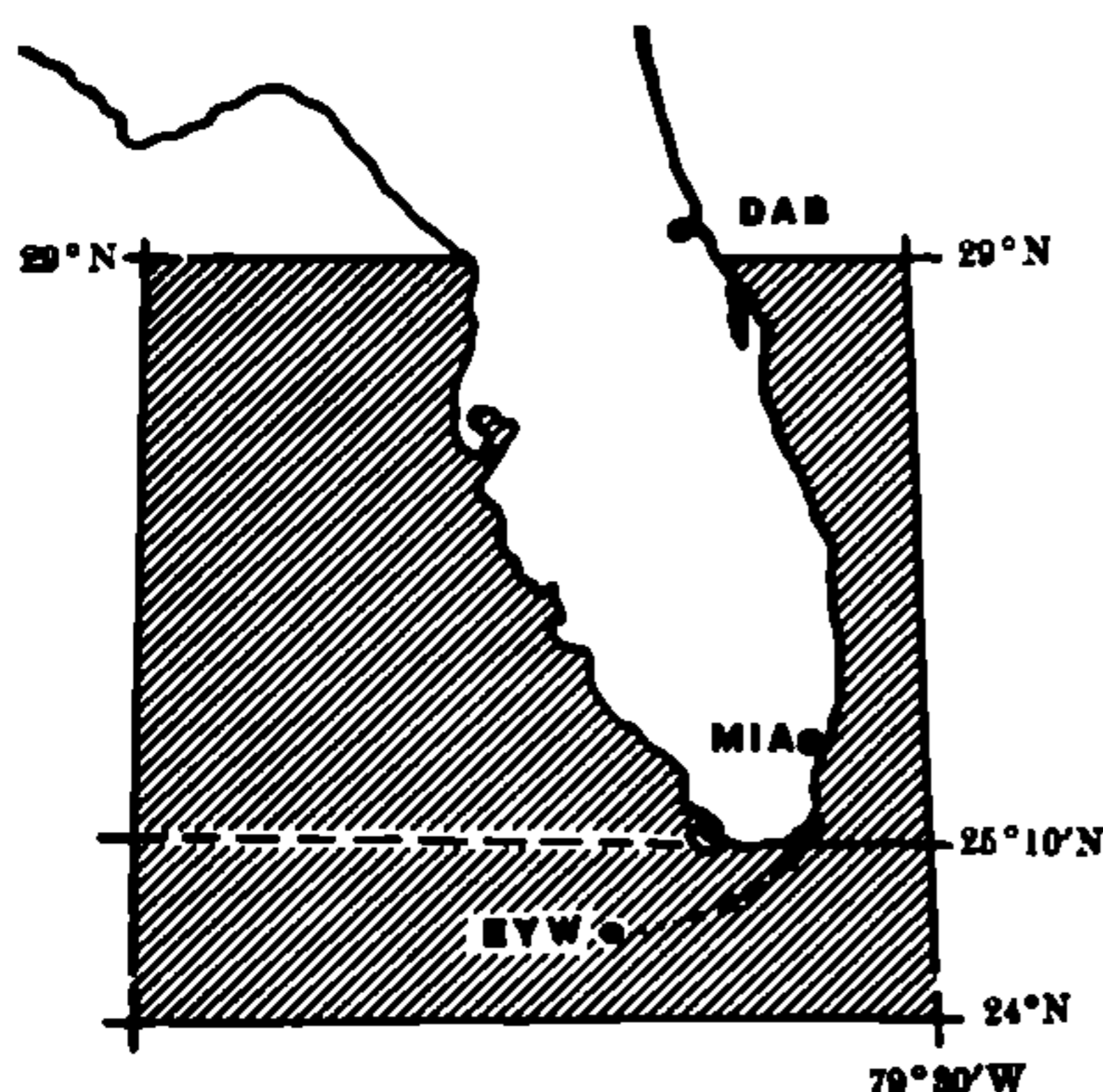
The following special rules of SFAR No. 15 are in effect. No person may operate any civil aircraft:

(1) Over water and outside the land mass of the State of Florida beginning at 29°N lat., 85°W long., thence clockwise to 29°N lat., 79°30'W long. to 24°N lat., 79°30'W long., to 24°N lat., 85°W long., to the point of beginning or over land South of 25°10'N lat., unless:

(a) It is operated under a flight plan that has been approved by appropriate military authority acting through an FAA air traffic control facility; and

(b) the aircraft possesses functioning navigation and communications equipment necessary to maintain two-way radio contact with air traffic control facilities at all times during the operation, and the pilot in command monitors the radio frequencies specified by air traffic control.

SFAR No. 15 is applicable to the land mass between 25°10'N and 29°00'N whenever activated by NOTAM.



PROHIBITION OF FLIGHT DURING GEMINI OPERATIONS

In support of Gemini landing and recovery operations, the Administrator, FAA, adopted Special Federal Aviation Regulation No. 18 on March 18, 1965. It will be in effect until the Gemini manned space flight operations are completed. It specifies that no pilot may operate a civil or public aircraft of U.S. registry and no person operating under any airman certificate issued by FAA may pilot any aircraft in such areas as may be designated for recovery operations. These areas will be prescribed in detail including dates and times of activation by a NOTAM to be issued in advance of a particular Gemini operation.

April 1965

SIMULTANEOUS OPPOSITE DIRECTION OPERATIONS ON PARALLEL RUNWAYS

Control towers may authorize opposite direction operations on parallel runways, on parallel landing strips, or on a runway and a parallel landing strip, when the following conditions are met:

a. All operations are conducted in VFR conditions, two-way communications are maintained with the aircraft involved, and pertinent traffic information is issued.

b. For operations between sunrise and sunset, a distance of at least 1400 feet exists between parallel runway centerlines, between adjacent edges of parallel landing strips, or between adjacent edges of a runway and a parallel landing strip.

c. For operations between sunset and sunrise, a distance of 2800 feet exists between parallel runway centerlines. (Note: Simultaneous opposite direction operations are not authorized between sunset and sunrise on a runway and a parallel landing strip or on parallel landing strips.)

FLIGHTS ACROSS U.S. BORDERS:

All pilots contemplating flights across U.S. borders should refer to complete regulations in INTERNATIONAL FLIGHT INFORMATION MANUAL, Volume 13, April 1965. Pilots must report for inspection at time of each entry to avoid inconveniences, additional expenses and penalties.

May 1965

HELP PREVENT SMUGGLING BY AIR

All American pilots are asked to help Federal law enforcement agencies in combating the smuggling of illegal aliens and contraband into the U.S. by private aircraft. If you have information of any kind that might relate to smuggling by air, please contact the nearest U.S. Immigration and Naturalization Service or U.S. Bureau of Customs office at once. The local FAA office will pass the information along for you, if you so desire. Awards for original information are paid by Customs under certain circumstances.

December 1964

PART-TIME CONTROLLED AIRSPACE DESIGNATION SUBJECT TO IRREGULAR EFFECTIVE HOURS/DATES

Control Zones

CALIFORNIA

•Chico: 0600-2100 local time Mon-Sat and 0800-2100 local time Sun.

COLORADO

Cortez: 1300-0400Z daily.

GEORGIA

Valdosta, Moody AFB: 0600-1800 Mon thru Thurs; 0600-2200 Fri; 0800-1800 Sat; 1200-1800 Sun. Not designated on holidays.

ILLINOIS

Bloomington: 0600-2000.

•Galesburg: 0700-2000 local time daily.

Marion: 0800-2100 local time daily.

INDIANA

Marion: 0700-2000 Mon-Sat; 0800-2000 Sun.

IOWA

Fort Dodge: 0700-2200 local time daily.

KANSAS

Liberal Mun Arpt: 0700-2000 daily.

LOUISIANA

Fort Polk: 0730-1630 local time Mon-Fri and 0730-1130 local time Sat.

MICHIGAN

Alpena: Continuous.

Benton Harbor: 0730-2300 local time daily.

Escanaba: 0730-2200.

Menominee: 0700-2100 local time daily.

MINNESOTA

Benld: 0730-2000.

Brainerd: 0730-1900 local time daily.

Thief River Falls: 0700-2030 daily.

Worthington: 0700-1900 daily.

MISSOURI

Jefferson City: 0600-2300 local time daily.

NEBRASKA

Allamore: 0700-2100 Sun-Fri; 0700-1800 Sat.

Columbus: 0700-1900 local time daily.

Hastings: 0600-2100 daily.

Kearney: 0700-2200 daily.

•McCook: 0630-2230 local time daily.

Norfolk: 0730-2000 daily.

OKLAHOMA

Bartlesville: 0600-1900 local time Sun thru Fri, except holidays and 0600-1800 local time Sat and holidays.

Enid: 0700-1800 Mon thru Thurs; 0700-2200 Fri; 0800-1600 Sat; 1200-1800 Sun. Not designated on holidays.

OREGON

Corvallis Mun Arpt: 0800-2200 local time daily.

SOUTH DAKOTA

Yankton: 0800-1900 daily.

TEXAS

Berger: 1230-2130 local time daily, except Sat.

Del Rio: 0600-1800 Mon thru Thurs; 0800-2300 Fri; 0800-1600 Sat; 1200-1800 Sun.

Midland: 0700-2230, Mon thru Fri and 0700-1800 Sat, Sun, and federal legal holidays.

Lubbock (Reese AFB): 0630-1900 Mon- Thurs; 0630- 2300 Fri; 0800-1600 Sat; 1200-1800 Sun.

Temple: 0600-2200 daily.

UTAH

Vernal: 1100-0500Z daily.

WASHINGTON

Tacoma Industrial Arpt: 0500-2400 daily except Sat 0500-2100.

WISCONSIN

Camp Douglas: 0730-2330 local time daily.

Janesville: 0730-2245 local time Sun thru Fri and 0730-2000 local time Sat.

Rhineland: 0730-2000 local time daily.

Stevens Point: 0600-2330 local time daily.

Transition Areas

GEORGIA

Valdosta, Moody AFB: 0600-1800 Mon thru Thurs; 0600-2200 Fri; 0800-1600 Sat; 1200-1800 Sun. Not designated on holidays.

MICHIGAN

Alpena: Cont. until Feb 3, 1966.

Control Areas Extensions

WISCONSIN

Camp Douglas: Continuous.

FISH AND WILDLIFE SERVICE REGULATION

The Fish and Wildlife Service has the following regulation in effect governing the flight of aircraft on and over wildlife refuge areas:

"The unauthorized operation of aircraft at low altitudes over, or the unauthorized landing of aircraft on a wildlife refuge area is prohibited, except in the event of emergency."

The Fish and Wildlife Service requests that pilots maintain a minimum altitude of 1,000 feet above the terrain of a wildlife refuge area.

November 1965

BIRD HAZARDS

Migratory birds are hazardous to aircraft. Those considered the greatest potential hazard because of large size, abundance, or habit of flying in dense flocks are the whistling swans, geese, ducks, gulls, vultures, black-birds and starlings.

Birds of these species are considered particularly hazardous during spring and fall migrations, and when they are concentrated in wintering areas.

Available data are summarized in Section II of this publication.

VFR PRACTICE INSTRUMENT APPROACH PROCEDURES

VFR practice instrument approach procedures at the following locations are published for and used by USAF Air Training Command pilots:

Cotulla, Tex.	Radio Beacon	JAL-907-ADF
Cotulla, Tex.	VOR	JAL-907-VOR
Draughton-Miller Arpt. Temple, Tex.	VOR	JAL-809-VOR
Howard County Arpt. Big Spring, Tex.	VOR	JAL-5019-VOR
Killeen, Tex. Hood AAF	VOR	JAL-5031-VOR
Laredo AFB, Tex.	TACAN	JAL-226-TACAN
Rock Springs, Tex.	VOR	JAL-111-VOR-8
Sequin AF Aux., Tex.	Beacon	AL-5223-ADF
Williams AFB, Ariz.	TACAN	JAL-74-TACAN-2

These approach charts are published by the USAF Aeronautical Chart and Information Center in a loose-leaf format. Civil aviation requests for these charts should be submitted to the Director, Coast and Geodetic Survey, 14th and Constitution Avenue, N.W., Attention: Distribution Division Washington, D.C. 20230.

December 1964

APPROACH MONITORING SERVICE EVALUATION CHICAGO, OHARE, ILLINOIS

Approach Monitoring Service—AMS

Effective 1800 GMT May 1, 1965 Chicago Approach Control will begin a program to evaluate the concept of providing radar monitoring on the tower frequency 118.1 mcs. This evaluation will be conducted whenever less than basic VFR weather conditions exist and ILS approaches are being made for Runways 14R, 32L, 27, or 14L.

ATC Procedures

1. The Monitor Controller will have the capability of overriding the Tower controller on the tower frequency (118.1 mcs).

2. The Monitor Controller will not advise when the aircraft passes the approach fix or when the Monitor is terminated.

3. The Monitor Controller will transmit only when the aircraft proceeds outside of the safety zone lines as depicted on the PAR.

4. Approach monitoring will automatically be terminated at $\frac{1}{2}$ mile (middle marker).

5. During this evaluation monitoring will not be provided on the localizer frequencies unless specifically requested by the pilot.

6. This evaluation will not be conducted when parallel or other than ILS approaches are in use.

7. Information pertinent to this evaluation will be included in the ATIS (Automatic Terminal Information Service).

8. Approach control will advise when Approach Monitoring is being provided on tower frequency example—"flight ident) cleared for the (14R/32L/27/14L) approach, monitor provided on tower frequency contact the tower on 118.1 at the (name) marker".

Flight Procedures

1. If a pilot does not wish to participate in this program (equipment limitations or pilot preference) he must advise approach control on initial contact. The controller will then provide a normal monitor on the appropriate localizer frequency.

2. Pilots should not acknowledge monitor transmissions unless asked to do so.

Pilots comments on this procedure are solicited and should be forwarded through company channels.

April 1965

REVIEW OF FDC NOTAMS

Changes in flight data, particularly of a regulatory nature such as changes to instrument approach procedures, MEA's, etc., which become effective prior to the normal revision of affected charts or publications, are disseminated as FDC NOTAMS which remain active until the item can be published. Therefore it is extremely important that the NOTAMS issued by FDC be reviewed during pre-flight planning.

July 1965

Part-Time Manned Facilities and Aids

The testing of two types of low cost facilities for flight assistance service at local airports was completed on June 30, 1965. The facilities will be continued for an indefinite period.

The part-time manned facilities, the appropriate parent FSS shown in parenthesis, and the part-time facility hours of operation (local time) are:

Delta Municipal Airport, Delta, Utah (Salt Lake City FSS) 0600-1800.

Kimble County Airport, Junction, Texas (San Antonio FSS) 0600-1800.

Manhattan Municipal Airport Manhattan, Kansas (Salina FSS) 0600-2000.

Crescent Beach Airport, Myrtle Beach, S.C. (Florence FSS) 0800-2000.

Airport Information Desk (AID) locations with the parent FSS shown in parenthesis are:

Alken, South Carolina—(Florence, South Carolina)

Altus, Oklahoma—(Wichita Falls, Texas)

Aspen, Colorado—(Denver, Colorado)

Auburn, Alabama—(Montgomery, Alabama)

Frankfort, Kentucky—(Lexington, Kentucky CS/T)

Jamestown, New York—(Bradford, Pennsylvania)

Kerrville, Texas—(San Antonio, Texas)

Laconia, New Hampshire—(Montpelier, Vermont)

Lakeland, Florida—(Tampa, Florida)

Liberal, Kansas—(Garden City, Kansas)

Marion, Indiana—(Indianapolis, Indiana)

Mt. Vernon, Illinois—(St. Louis, Missouri)

Pittsfield, Massachusetts—(Albany, New York)

Ruidoso, New Mexico—(Roswell, New Mexico)

Tacoma Industrial Airport, Washington—(Seattle, Washington)

Twin Falls, Idaho—(Burley, Idaho)

October 1965

FLIGHT INFORMATION PUBLICATION POLICY

The following is, in essence, the statement issued by the FAA Administrator and published in the December 10, 1964, issue of the Federal Register, concerning the FAA policy as pertaining to the type of information that will be published as NOTAMs and in the Airman's Information Manual.

It is a pilot's inherent responsibility that he be alert at all times for and in anticipation of all circumstances, situations and conditions which affect the safe operation of his aircraft. For example, a pilot should expect to find air traffic at any time or place. At or near both civil and military airports and in the vicinity of known training areas, a pilot should expect concentrated air traffic although he should realize concentrations of air traffic are not limited to these places.

It is the general practice of the Agency to advertise by NOTAM or other flight information publications such information it may deem appropriate information which the Agency may from time to time make available to pilots as a way for the purpose of assisting them in exercising their regulatory responsibilities. Such information serves the aviation community as a whole and not pilots individually.

The fact that the Agency under one particular situation or another may or may not furnish information does not serve as a precedent of the Agency's responsibility to the aviation community; neither does it give assurance that other information of the same or similar nature will be furnished nor does it guarantee that any and all information known to the Agency will be furnished.

Consistent with the foregoing, it shall be the policy of the Federal Aviation Agency to furnish information only when, in the opinion of the Agency, a unique situation should be advertised and not to furnish routine information such as concentrations of air traffic, either at or near airports. The Airman's Information Manual will continue to provide information concerning every day occurrences that pilots should expect by good practice or regulation, expect to encounter or avoid.

July 1965

DECOMMISSIONING OF CENTER AREA DISCRETE FREQUENCIES

Effective January 1, 1966, all Center Area Discrete Frequencies will be decommissioned in accordance with FAA Order 7400.10, dated April 24, 1964, and September 18, 1964.

November 1965

LOCATION IDENTIFIERS

The following information changes affect the use of the location identifiers ATP-7350.1G.

AMN	Alma, Michigan Municipal Airport (Assignment)
AMN	Alma, Michigan Radiobeacon (Assignment)
GCM	Grand Canyon, Arizona, Grand Canyon National Park Airport (Assignment)
MVC	Monroeville, Alabama, Monroe County Airport (Change)
MVC	Monroeville, Alabama VOR (Change)
SSN	Romulus, New York, Seneca Airpark (Change)
SBX	Shelby, Montana, Shelby Airport (Assignment)
SBX	Shelby, Montana, Radiobeacon (Assignment)
ISW	Wisconsin Rapids, Wisconsin, Southwood County Airport (Assignment)
ISW	Wisconsin Rapids, Wisconsin Radiobeacon (Assignment)
M33	Cherokee Village, Arkansas, Cherokee Village Airport (Assignment)
073	Comanche, Texas, Dudley Field (Assignment)
615	Cottage Grove, Oregon, Cottage Grove Airport (Assignment)
075	Dublin, Texas, Dublin Airpark (Assignment)
074	De Leon, Texas, Nelson Hood Airport (Assignment)
625	Eugene, Oregon, T-Bird Airpark (Assignment)
484	Fairhope, Alabama, Municipal Airport (Assignment)
076	Gorman, Texas, Gorman Airport (Assignment)
078	Jackson, Texas, Parsley Field (Assignment)
192	Marcel, Wells, Texas, Patton Kingdom Airport (Assignment)

VFR AIRPORT TRAFFIC PATTERNS

In accordance with FAR Part 91.89(c)(3)

Altitude	Direction	Regulatory Requirement	Typical Patterns
1000-1400 MSL	East	Left turn	100° MSL
1000-1400 MSL	West	Right turn	100° MSL

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Washington**DISTRICT OF COLUMBIA****TEST EVALUATION OF VFR ARRIVAL AND
DEPARTURE RADAR TRAFFIC INFORMATION
SERVICE****VFR Radar Traffic Information Area**

GENERAL PROCEDURES: The Washington VFR Radar Traffic Information Area is that airspace which extends upwards to an altitude of four thousand feet, MSL inclusive, and is encompassed by a line connecting the following points: Rockville, Laurel, North Beach, Hughesville, Indian Head, Centerville, and Herndon. (See chart on facing page.)

Pilots of aircraft without radio, as well as those unable to contact VFR Arrival or Departure Information Service on assigned frequencies, are urged to conform to routing via designated VFR arrival and departure routes.

Pilots operating VFR flights destined for Washington National Airport should follow the designated arrival and departure routes listed herein in order to maintain a safe, orderly flow of air traffic in the Washington area.

All aircraft arriving or departing Washington National Airport should proceed with caution when in the vicinity of Andrews AFB.

If destination is other than Washington National Airport, so advise.

THE RADAR SERVICE DESCRIBED HEREIN IS NOT INTENDED TO RELIEVE THE PILOT OF HIS RESPONSIBILITY FOR CONTINUAL VIGILANCE TO SEE AND AVOID OTHER AIRCRAFT. IT IS PROVIDED TO AID HIM IN HIS VISUAL SURVEILLANCE BY CALLING TO HIS ATTENTION PERTINENT TRAFFIC. PILOTS ARE REMINDED THAT THE SURVEILLANCE RADAR UTILIZED BY THE CONTROLLER DOES NOT PROVIDE ALTITUDE INFORMATION.

The following procedures should be adhered to by pilots of VFR flights desiring this service and having proper radio equipment when arriving at and departing from Washington National Airport.

ARRIVAL PROCEDURES: Arriving VFR flights desiring traffic information should contact Washington Traffic Information Service on 119.3 mcs/338.2 mcs UHF when approaching from Laurel, North Beach Int and Hughesville; Indian Head, Centerville, Herndon, and Rockville. When practicable, pilots should follow the appropriate VFR arrival route as indicated (See Chart) and maintain listening watch on traffic information frequency until further advised. Landing information will be furnished to aircraft destined for Washington, and radar traffic information will be provided until the pilot is advised to contact the tower.

DEPARTURE PROCEDURES: VFR flights departing from Washington Airport desiring traffic information should request the service on initial contact to Ground Control. The pilot should also advise his proposed direction of flight; e.g., "VFR Information Service, Laurel." Following take-off, the tower will advise the pilot when to contact Washington Information Service and the frequency to be used. Flights proceeding to Laurel, North Beach, Hughesville, Indian Head, Centerville, Herndon, and Rockville will use 119.3 mc/338.2 mc UHF. Pilots should depart the Washington Terminal area via the designated VFR departure route most nearly aligned with their destination. They should also maintain listening watch on the appropriate information service frequency until cleared to leave the frequency or beyond the perimeter fix.

Washington National Airport**Arrival Routes**

Northeast—Report Laurel. Proceed well right of Washington-Baltimore Parkway to Beltsville, then north of Washington to Chain Bridge.

East—Report North Beach. Proceed via Brandywine to Fort Washington. Caution—Military conventional and jet traffic vicinity of Andrews AFB Control Zone.

Southeast—Report Hughesville. Proceed via Waldorf to Fort Washington. Caution—Andrews jet penetration inbound on Andrews VOR 187 degree radial descending to cross Andrews LOM at 1500 feet MSL.

Southwest—Report Indian Head. Proceed on right side of Potomac River until past Mount Vernon.

West—Report Centerville. Proceed well right of U.S. Route 29 highway to Falls Church.

Northwest—Report Herndon. Proceed well right of Potomac River to Falls Church.

North—Report Rockville. Proceed well left of Potomac River to Chain Bridge.

Departure Routes

Northeast—Proceed via west bank of Anacostia River to Riverdale and well right of Washington-Baltimore Parkway until past Beltsville Airport. Caution, Andrews jet penetration inbound on Andrews VOR 007 radial descending to cross Andrews LOM at 1500' MSL.

East—Proceed via Fort Washington and Brandywine to North Beach.

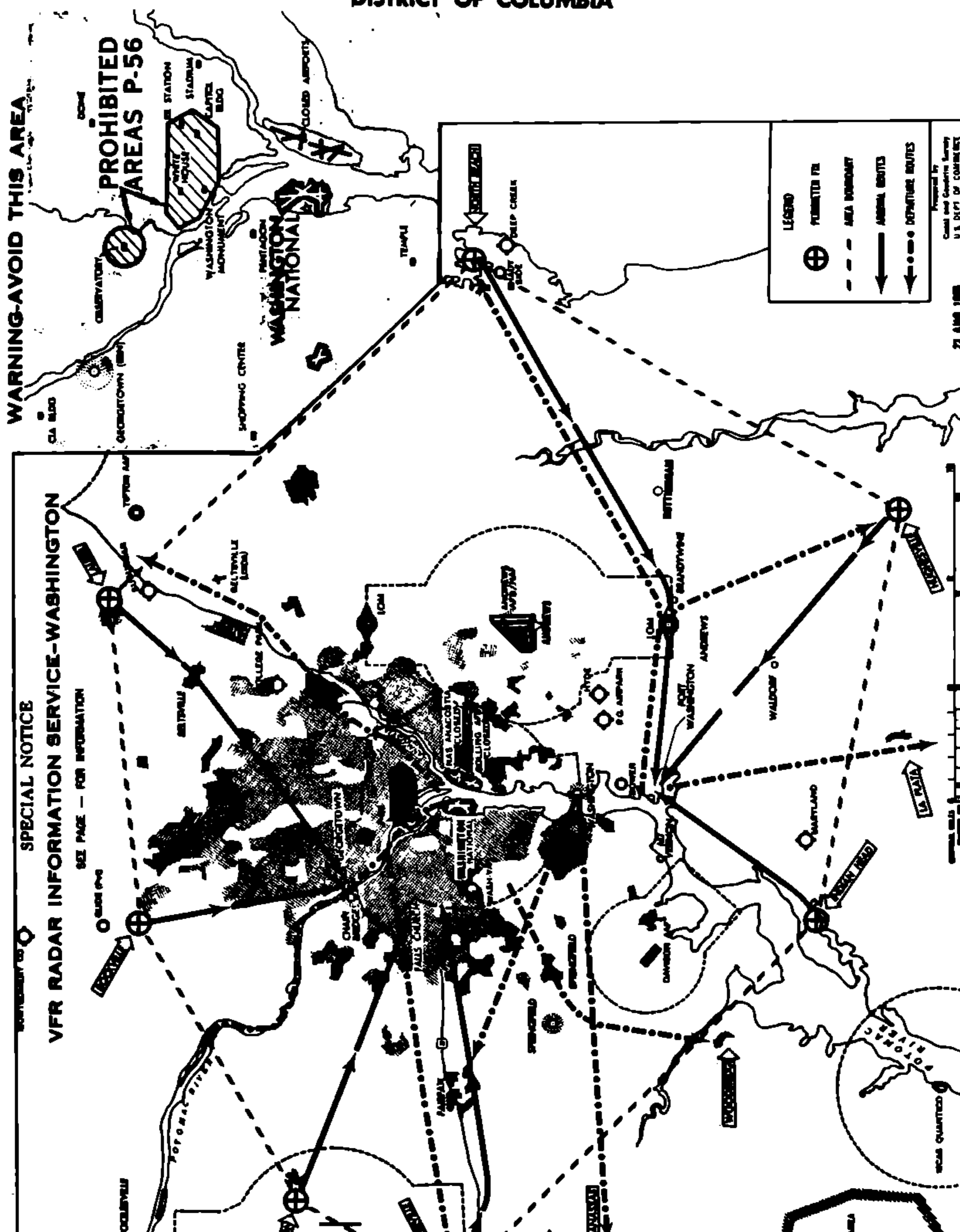
Southeast—Proceed via Fort Washington and LaPlata.

Southwest—Proceed well right of Potomac River until past Woodbridge.

West—North departures proceed well right of U.S. Route 29 highway until past Centerville. South departures proceed via Washington LFR to Manassas.

Northwest—North departures proceed via Potomac River until leaving the area. South departures proceed via Washington Rdn to Fairfax.

DISTRICT OF COLUMBIA



Atlanta

GEORGIA

TERMINAL RADAR SERVICE

On November 15, 1962, a TRSA program was implemented at Atlanta, Georgia as one of the first of selected locations to evaluate the program. The evaluation was completed on June 1, 1963. This evaluation and subsequent service is part of a National Terminal Radar Program and Atlanta Terminal Radar Control is now in Stage III of the National Program.

Included in Stage III are the following services:

1. Radar control of IFR traffic and radar advisories on nonparticipating aircraft on a *workload permitting basis*.
2. Radar vectoring and sequencing on a *full time basis* of all IFR & VFR aircraft landing at Atlanta Airport.
3. Provide a separation service between *all participating* aircraft operating in the Atlanta Terminal Radar Service Area.

The Atlanta Terminal Radar Service Area includes all of Atlanta Airport Control Zone up to 7000 feet MSL. In addition, all airspace within a 15-statute mile radius of Atlanta Airport is included up to 7000 feet MSL with the following exclusions:

1. Airspace North of V16N airway from the surface to 3000 feet MSL.
2. Airspace South of V16N airway from the surface to 2000 feet MSL.
3. All airspace within a 1½ statute mile radius of Edwards Stryport, Owen Airport, and all airspace within the Dobbins AFB Control Zone.

Flight Procedures

1. IFR Flights—Aircraft operating within the Atlanta TRSA shall be operated in accordance with current IFR procedures.

2. VFR Flights

a. Airports within the Atlanta TRSA:

- (1) Arriving aircraft will be expected to contact Atlanta Terminal Control on specified frequencies and in relation to geographical fixes listed in d. below.
- (2) Departing aircraft will be advised by the tower when to contact departure or terminal control and the frequency to be used.

b. Airports underlying the Atlanta TRSA:

- (1) Unless flight will be conducted below the floor of the TRSA, arriving aircraft will be expected to contact Atlanta Terminal Control on specified frequencies and in relation to geographical fixes listed in d. below.
- (2) Departing aircraft will be expected to contact Atlanta Terminal Control on the frequency specified in d. below as soon as possible after becoming airborne if it is desired that flight be conducted within the TRSA.

- c. Transiting Aircraft—Aircraft desiring to transit the TRSA will be expected to contact Atlanta Terminal Control on specified frequencies and in relation to geographical fixes listed in d. below.

- d. Frequencies and Fixes—En route aircraft should establish communications with Atlanta Terminal Control approximately 25 miles from Atlanta Airport. Aircraft entering the TRSA north of Airway V-16N should use 119.8 or 381.6 MC; Aircraft entering the TRSA south of Airway V-16N should use 119.3 or 343.6 MC. Aircraft not equipped for two-way communications on these frequencies should transmit on 122.7 MC and listen on the appropriate frequency specified above.

In addition to published radio fixes and other prominent geographical fixes, the following geographical fixes and frequencies may be used by pilots:

Fix	Frequency	Location
City of Douglasville	119.8/381.6	West-Northwest
Kennesaw Mountain	"	Northwest
City of Roswell and Chattahoochee River	"	North
Dekalb-Peachtree Airport	"	Northeast
Stone Mountain	"	Northeast
Gunn Field	"	Northeast
City of Conyers	"	East
City of Griffin	119.3/343.6	Southeast
City of Newnan	"	Southwest
Chattahoochee River	"	Southwest and West

ATC Procedures

1. The Atlanta TRSA is primarily a radar environment, and control will be predicated thereon. This does not preclude application of nonradar separation as required or deemed appropriate.
2. To facilitate radar identification of arriving and transiting VFR aircraft, ATC may request such aircraft to report their position in relation to fixes (prominent geographical or radio) within or outside the perimeter of the TRSA.
3. Radar headings and, if required, altitude assignments may be given to VFR flights operating within the TRSA.

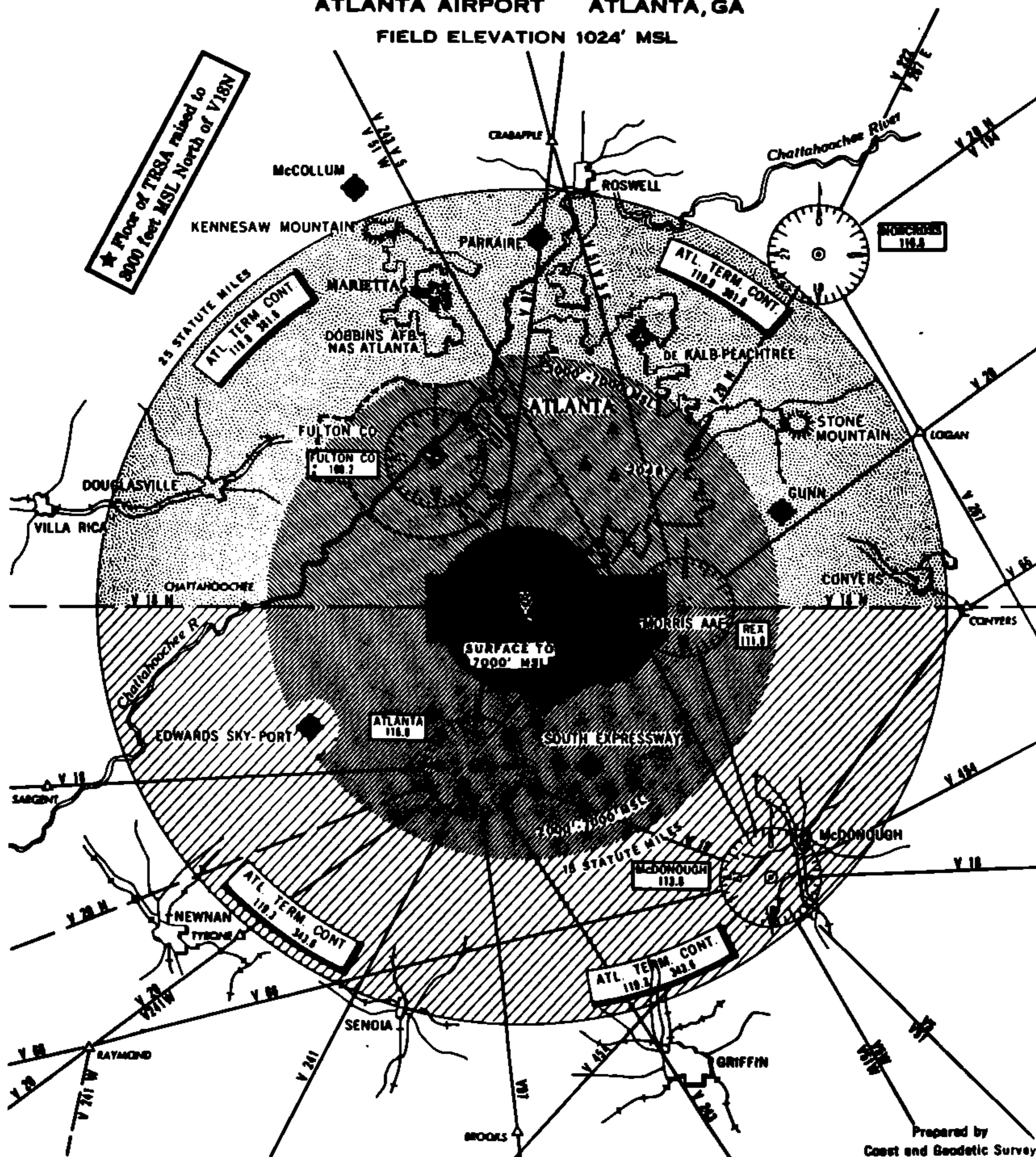
NOTE.—Assignment of radar headings and/or altitudes are based on the provision that a pilot operating in accordance with VFR is expected to advise ATC if compliance with an assigned route, radar heading or altitude will cause the pilot to violate such rules.

4. Traffic information on observed but unidentified radar targets will be provided on a workload permitting basis.

TERMINAL RADAR SERVICE AREA

ATLANTA AIRPORT ATLANTA, GA

FIELD ELEVATION 1024' MSL



LEGEND

TERMINAL RADAR SERVICE AREA



Prepared by
Coast and Geodetic Survey
U.S. DEPT. OF COMMERCE

GEORGIA

5. When VFR aircraft are being held within the TRSA and control is based thereon, the ATC clearance will specify the distance (radius) and, if appropriate, the direction from the geographical fix within which holding is to be accomplished. In such cases, the pilot will be advised when to EXPECT FURTHER CLEARANCE.
6. During weather conditions equal to or better than basic VFR, 500 feet vertical separation may be employed between VFR flights and/or between VFR and IFR flights operating within the TRSA.
7. During weather conditions equal to or better than basic VFR, visual separation may be employed between VFR flights and/or between VFR and IFR flights operating within the TRSA when a pilot reports the other aircraft in sight and advises that he can maintain his own separation from such aircraft.
8. When IFR flights, operating in VFR weather conditions, are being sequenced with other traffic and the pilot reports the aircraft he is to follow is in sight, the pilot may be advised to follow such traffic and may be cleared for a "visual approach."

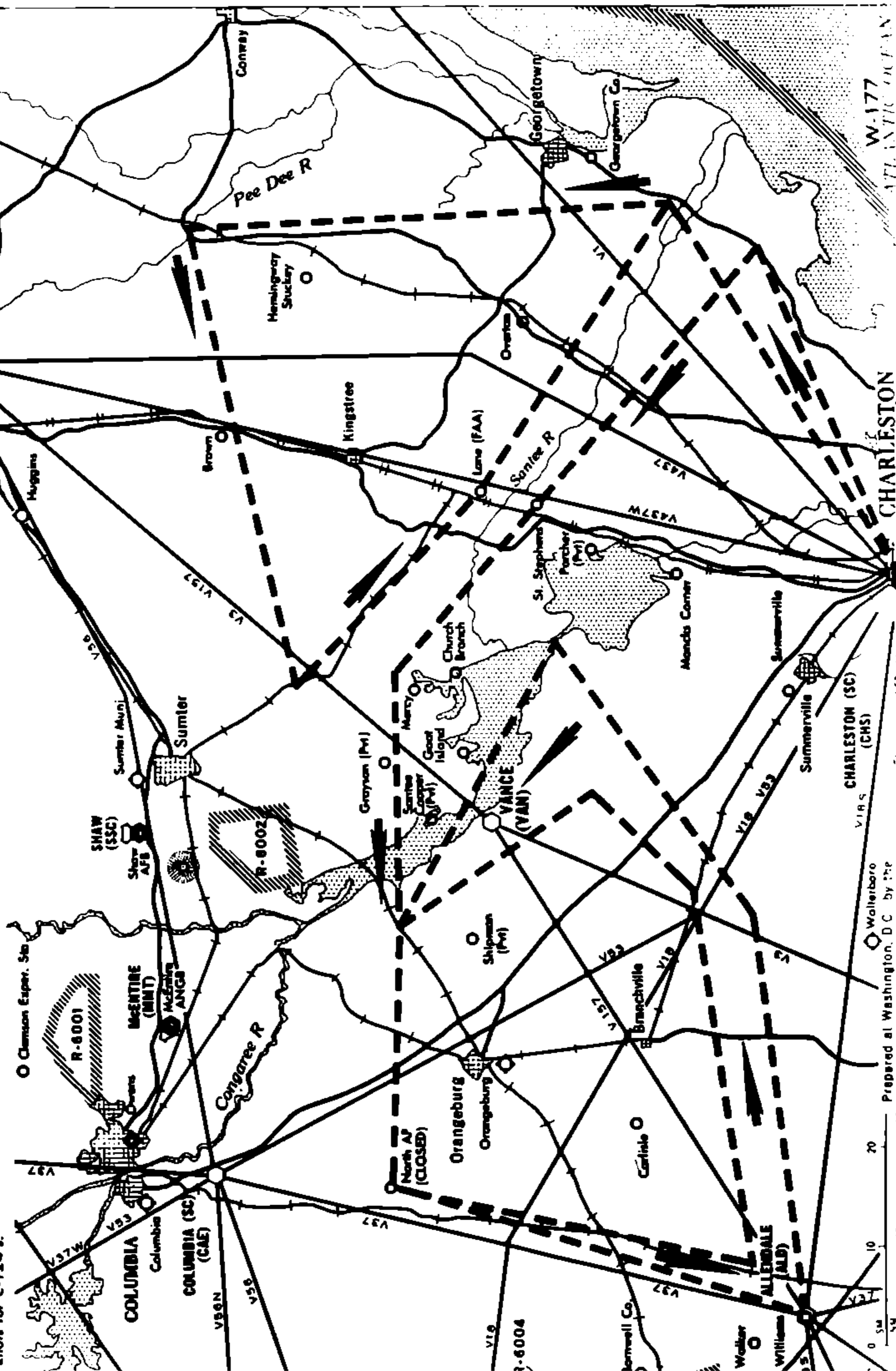
NOTE.—Basic VFR weather minima as set forth in FAR 91.105 shall apply within the Atlanta TRSA, except that special VFR weather minima set forth in FAR 91.107 shall continue to be applicable within control zones. Application of ATC procedures and separation minima within the TRSA is not to be interpreted as relieving pilots of their responsibilities to see and avoid other traffic operating in basic VFR weather conditions, to maintain appropriate terrain and obstruction clearance, or to remain in weather conditions equal to or better than the established minima. However, this does not preclude the pilot from requesting IFR handling, or while within the control zone, requesting clearance in accordance with special VFR.

SPECIAL NOTICE

LOW LEVEL NAVIGATION ROUTES

CHARLESTON, SOUTH CAROLINA

level navigation routes are used for low level day and night navigation training by C-130E and C-124C aircraft under VFR conditions. The routes are used for single ship and formation flights with cargo drops at North Field, and miniature paratroops at Lane Airport, S. C. The routes are most active on Tuesday and Thursday between 07-0200Z. Altitudes vary from 1250' to 4000' MSL, speeds from 130 to 250 knots for C-130's, and 130 to 150 knots for C-124's.



Prepared at Washington, D.C. by the

Wallerboro

Merced

CALIFORNIA

CASTLE TERMINAL RADAR SERVICE AREA

Implementation

On March 1, 1965, a TRSA program was implemented at Merced, California, in the Castle AFB terminal area. The service is designed using the concepts developed by the Federal Aviation Agency for the Atlanta, Georgia, area and, in addition, includes procedures peculiar to the operation of military aircraft. The service is mandatory for use by the USAF pilot. All civil and other military pilots are encouraged to participate on a voluntary basis.

The Castle Terminal Radar Service Area is that airspace extending upward from the surface to and including 7,000 feet MSL within the Merced Control Zone; and, in addition, that airspace extending from 1,500 feet MSL to and including 7,000 feet MSL within a 15 nautical mile radius of the Castle Airport, excluding the airspace 3,000 feet MSL and above within Victor Airway 23.

Flight Procedures

1. **IFR Flights**—Aircraft operating within the Castle TRSA shall be operated in accordance with current IFR procedures.

2. **VFR Flights:**

a. Airports within the Castle TRSA:

(1) Arriving aircraft will be expected to contact Castle Approach Control on specified frequencies and in relation to geographical fixes listed in d. below.

(2) Departing aircraft will be expected to contact Castle Departure Control on a frequency specified in d. below.

b. Airports underlying the Castle TRSA:

(1) Unless flight will be conducted below the floor of the TRSA, arriving aircraft will be expected to contact Castle Approach Control on a frequency specified and in relation to geographical fixes listed in d. below.

(2) Departing aircraft will be expected to contact Castle Departure Control on a frequency specified in d. below as soon as possible after becoming airborne if it is desired that flight be conducted within the TRSA.

c. **Transiting Aircraft:** Aircraft desiring to transit the TRSA will be expected to contact Castle Approach Control on a frequency specified and in relation to geographical fixes listed in d. below.

d. **Frequencies and Fixes:** En route aircraft should establish communications with Castle Approach Control approximately 25 nautical miles from the Castle Airport.

(1) **Frequencies:**

(a) **Civil:** 118.0 mc Transmit and Receive
122.5 mc Transmit
114.2 mc Receive

(b) **Military:** 294.5 mc (jet aircraft)
301.5 mc (conventional aircraft)
137.65 mc (VHF only equipped aircraft)

(2) **Fixes:** In addition to published radio fixes, the following geographical fixes may be used by pilots:

Fix	Location
City of Modesto	West-Northwest
Crows Landing (NAS)	West
City of Gustine	West-Southwest
City of Los Banos	South-Southwest

Fix

City of Dos Palos
City of Chowchilla
City of Madera
City of Mariposa
Don Pedro Reservoir
City of Oakdale

Location

South
East-Southeast
East-Southeast
East-Northeast
North
Northwest

ATC Procedures

1. The Castle TRSA is primarily a radar environment and control will be predicated thereon. This does not preclude application of nonradar separation as required or deemed appropriate.

2. To facilitate radar identification of arriving and transiting VFR aircraft, ATC may request such aircraft to report their position in relation to fixes (prominent geographical or radio) within or outside the perimeter of the TRSA.

3. Radar headings and, if required, altitude assignments may be given to VFR flights operating within the TRSA.

NOTE.—Assignment of radar headings and/or altitudes are based on the provision that a pilot operating in accordance with VFR is expected to advise ATC if compliance with an assigned route, radar heading or altitude will cause the pilot to violate such rules.

4. Traffic information on observed but unidentified radar targets will be provided on a workload permitting basis.

5. When VFR aircraft are being held within the TRSA and control is based thereon, the ATC clearance will specify the distance (radius) and, if appropriate, the direction from the geographical fix within which holding is to be accomplished. In such cases, the pilot will be advised when to EXPECT FURTHER CLEARANCE.

6. During weather conditions equal to or better than basic VFR, 500 feet vertical separation may be employed between VFR flights and/or between VFR and IFR flights operating within the TRSA.

7. During weather conditions equal to or better than basic VFR, visual separation may be employed between VFR flights and/or between VFR and IFR flights operating within the TRSA when a pilot reports the other aircraft in sight and advises that he can maintain his own separation from such aircraft.

8. When IFR flights, operating in VFR weather conditions, are being sequenced with other traffic and the pilot reports the aircraft he is to follow is in sight, the pilot may be advised to follow such traffic and may be cleared for a "visual approach."

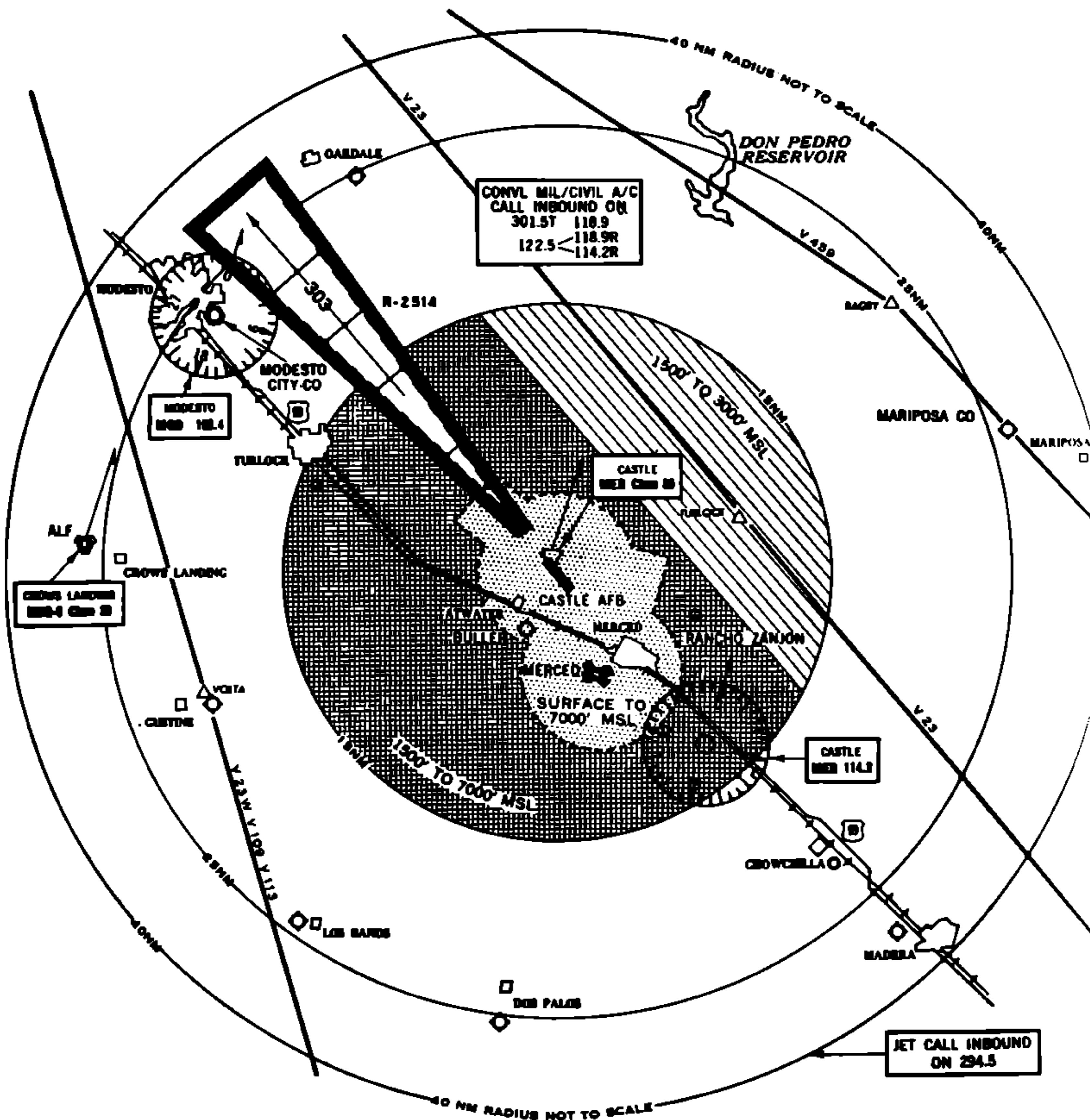
NOTE.—Basic VFR weather minima as set forth in FAR 91.105 shall comply within the Castle TRSA, except that special VFR weather minima set forth in FAR 91.107 shall continue to be applicable within control zones. Application of ATC procedures and separation minima within the TRSA is not to be interpreted as relieving pilots of their responsibilities to see and avoid other traffic operating in basic VFR weather conditions, to maintain appropriate terrain and obstruction clearance, or to remain in weather conditions equal to or better than the established minima. However, this does not preclude the pilot from requesting IFR handling, or while within the control zone, requesting clearance in accordance with special VFR.

TERMINAL RADAR SERVICE AREA

CASTLE AIR FORCE BASE

MERCED, CALIFORNIA

FIELD ELEVATION 188' MSL



This chart not to be used for navigational purposes

LEGEND

TERMINAL RADAR SERVICE AREA

 SURFACE TO 7000'
 1500' TO 3000'
 1500' TO 7000'

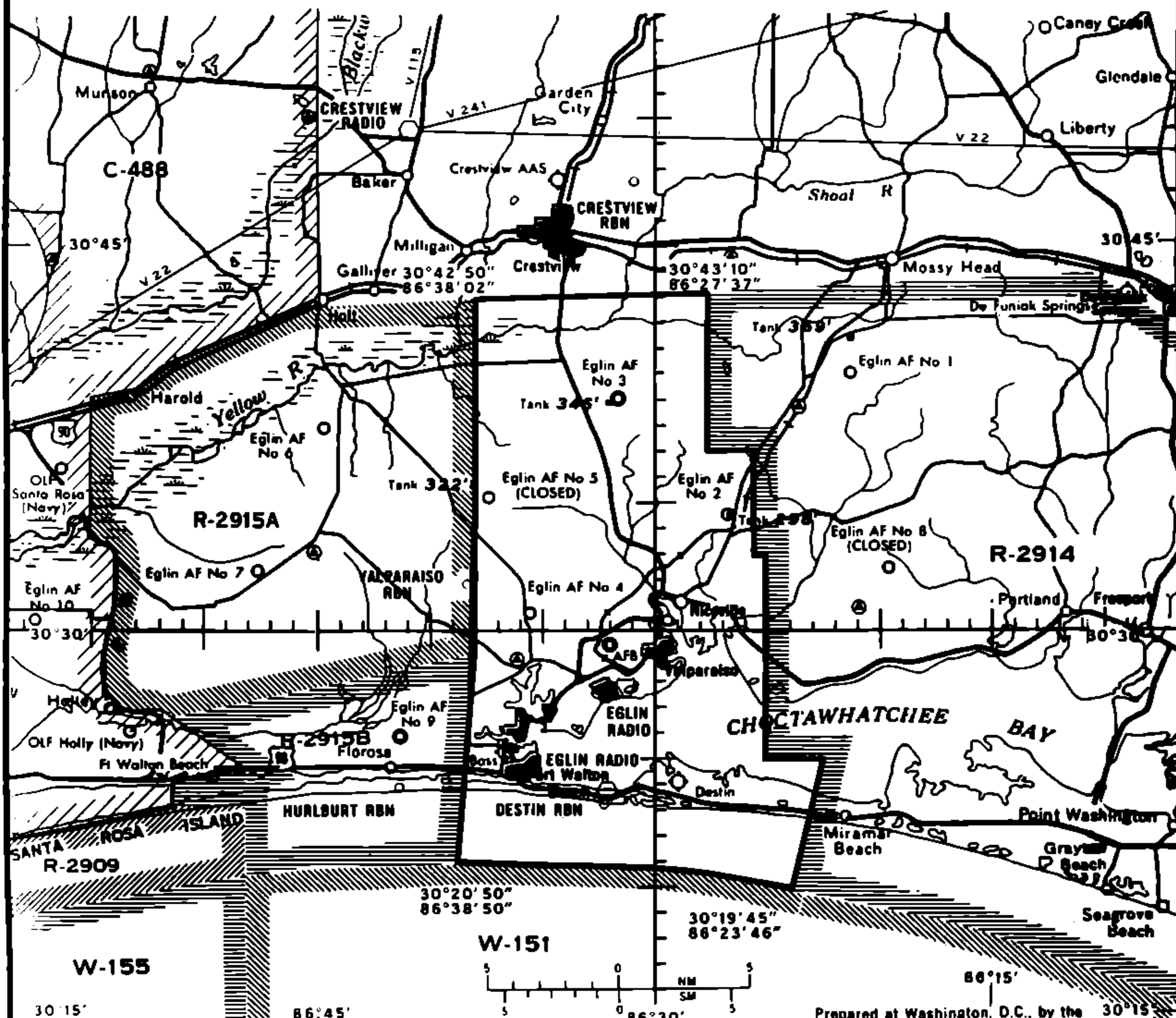
CONTACT OR CALL-UP AREAS

CONVENTIONAL AIRCRAFT 25NM
 JET AIRCRAFT 40NM

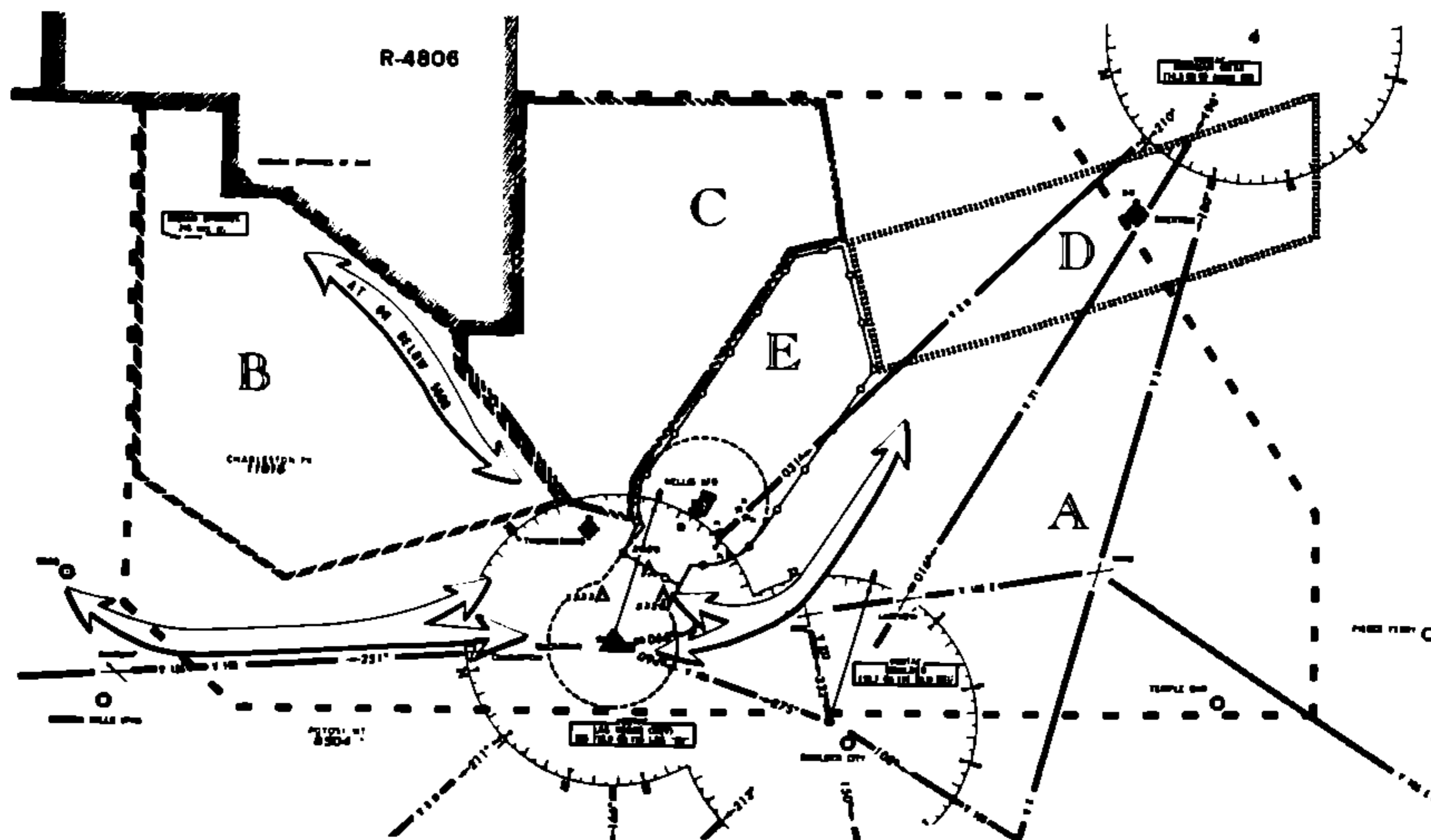
Prepared by
 Coast and Geodetic Survey
 U.S. DEPT. OF COMMERCE

VALPARAISO, FLORIDA, TERMINAL AREA
SPECIAL AIR TRAFFIC RULES
(VFR OR VFR CONDITIONS)

A special rule in effect sunrise to sunset, Monday through Saturday requires pilots to obtain information about special activities operating between R-2914 and R-2915A and B. These activities use varying altitudes but altitudes for VFR flight are always available. Contact Crestview Radio or Eglin RAPCON for information.



LAS VEGAS TERMINAL AREA NOTICE LAS VEGAS, NEVADA



Due to high volume Nellis AFB jet operations in the illustrated area pilots of aircraft not on IFR flight plans operating into or through the Las Vegas area are encouraged to:

1. Avoid areas of jet concentration by following suggested routings shown by arrows, at appropriate altitudes and,
2. a. Arriving - contact Las Vegas Approach Control on 121.1, 123.9, 284.6 or 353.6 mcs, for radar advisories when inbound prior to reaching a point approximately 30 miles from Las Vegas or if not practical, contact Las Vegas Radio for in-flight advisories.
- b. Departing - contact Las Vegas Departure Control on 119.4 or 335.5 mcs, for radar advisories immediately after departure from McCarran Field or Thunderbird Airport.

LEGEND

Nellis AFB based jet aircraft
VFR departure and arrival areas.
Altitudes are Mean Sea Level

- A ——— FL 230
- B - - - - - 5,500 to FL 230
- C ——— Surface to FL 230
- D ——— 8,000 to 9,000
- E ——— Surface to 9,000 inch.

Recommended Altitudes

VFR routes

Base And Airports Compiled From
54th Edition Of No. 1 Whitey And 59th Edition
Of Los Angeles Section Aeronautical Charts

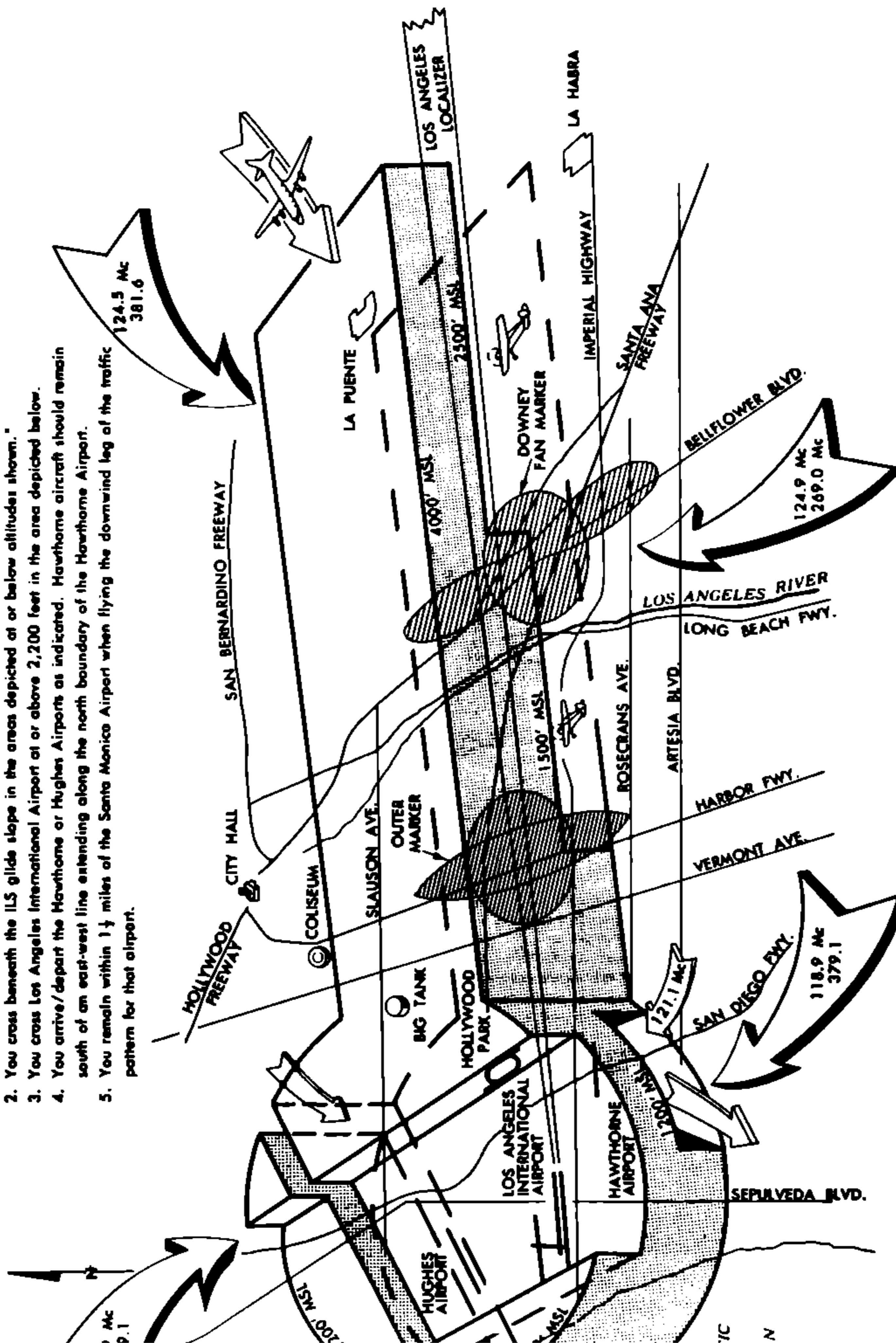


LOS ANGELES TERMINAL AREA NOTICE

Prior to penetrating this area, VFR pilots are encouraged to contact Los Angeles Tower for traffic advisory service on the frequencies indicated for the direction of flight.

It is not necessary to contact Los Angeles Tower if:

1. You are above 4,000 feet.
2. You cross beneath the ILS glide slope in the areas depicted at or below altitudes shown.*
3. You cross Los Angeles International Airport at or above 2,200 feet in the area depicted below.
4. You arrive/depart the Hawthorne or Hughes Airports as indicated. Hawthorne aircraft should remain south of an east-west line extending along the north boundary of the Hawthorne Airport.
5. You remain within 1 1/2 miles of the Santa Monica Airport when flying the downwind leg of the traffic pattern for that airport.



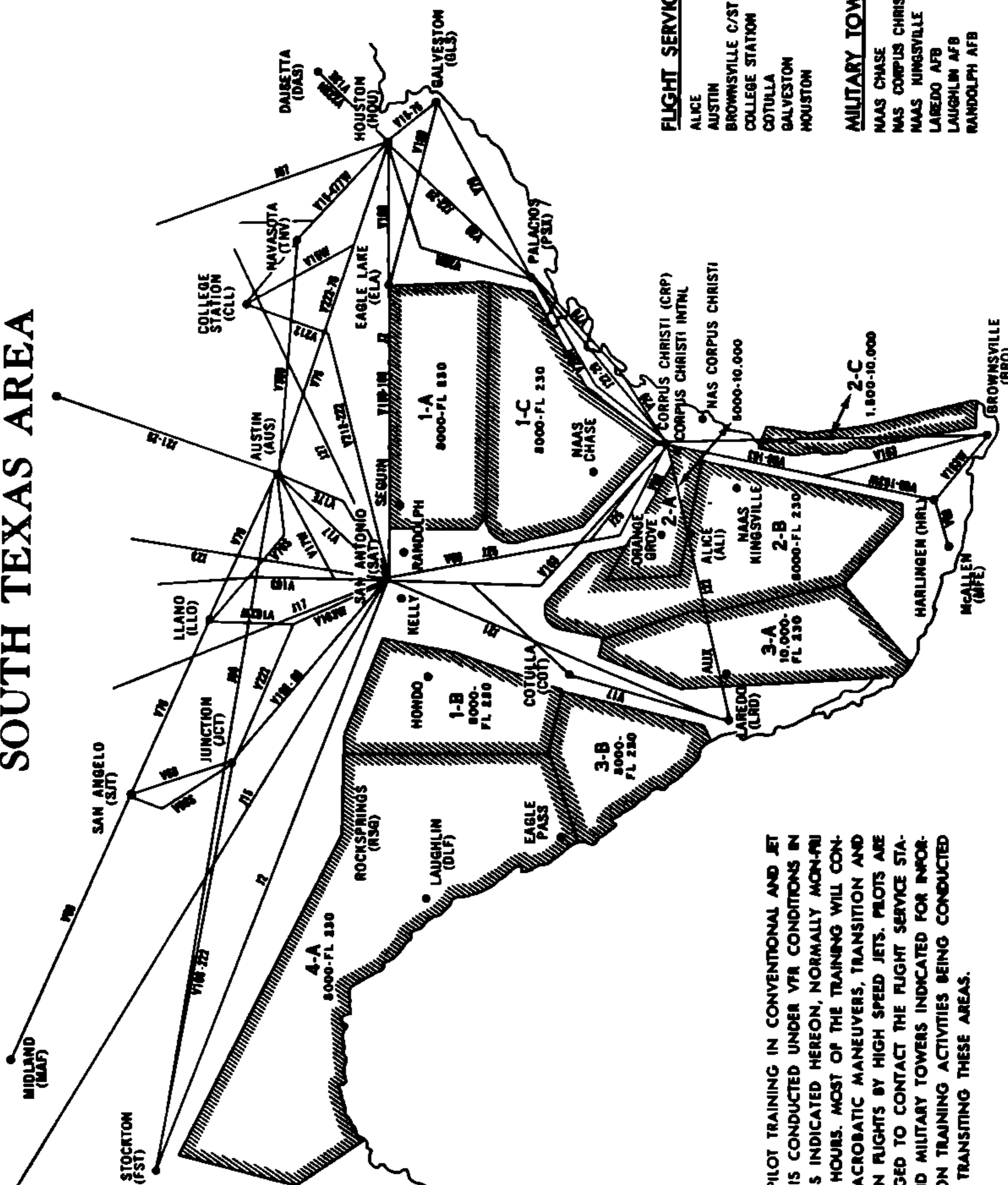
*THIS DOES NOT CONSTITUTE AUTHORITY FOR A PILOT TO DEVIATE FROM FAR 91.79 OR OTHER APPLICABLE PROVISIONS OF THE FEDERAL AVIATION REGULATIONS.

Washington, D.C., by the
1 and Geodetic Survey

02 JUL 1968

Prepared by
Coast and Geodetic Survey
U.S. DEPT. OF COMMERCE

VFR FLIGHT ADVISORY SERVICE CONCERNING MILITARY TRAINING ACTIVITY IN SOUTH TEXAS AREA



FLIGHT SERVICE STATIONS

ALICE	JUNCTION
AUSTIN	MALLEN
BROWNSVILLE C/ST	MIDLAND
COLLEGE STATION	PALACIOS
COTULLA	SAN ANGELO C/ST
GALVESTON	SAN ANTONIO
HOUSTON	WINK

FREQ

134.1	142.74
128.3	142.74
119.9	134.1
127.08	118.5T
128.3	
128.3	

MILITARY TOWERS

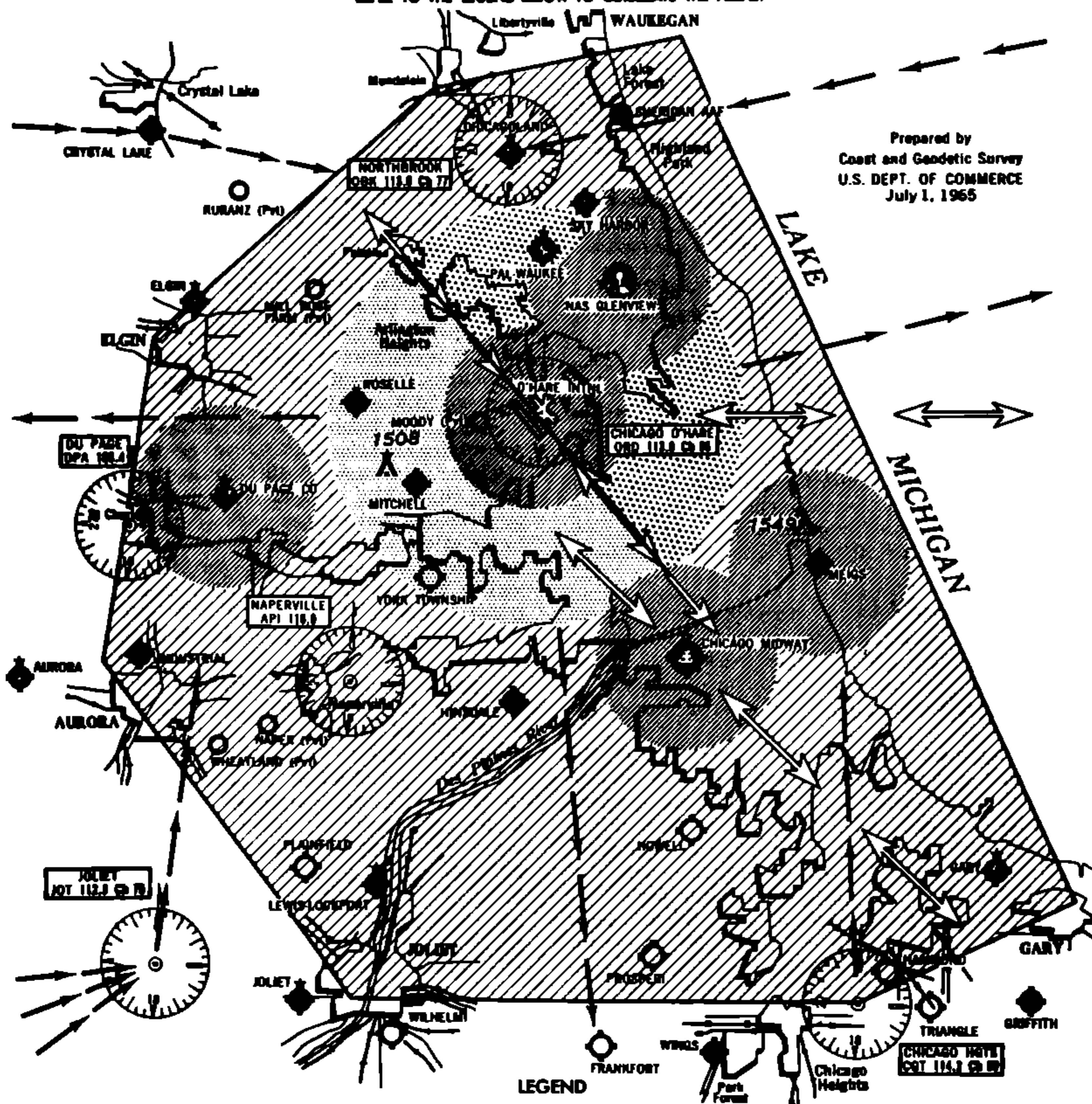
NAAS CHASE	
NAAS CORPUS CHRISTI	
NAAS KINGSVILLE	
LAREDO AFB	
LAUGHLIN AFB	
RANDOLPH AFB	

PILOT TRAINING IN CONVENTIONAL AND JET IS CONDUCTED UNDER VFR CONDITIONS IN S INDICATED HEREON, NORMALLY MON-FRI HOURS. MOST OF THE TRAINING WILL CON- ACROBATIC MANEUVERS, TRANSITION AND N FLIGHTS BY HIGH SPEED JETS. PILOTS ARE DED TO CONTACT THE FLIGHT SERVICE STA- ID MILITARY TOWERS INDICATED FOR INFOR- ON TRAINING ACTIVITIES BEING CONDUCTED TRANSITING THESE AREAS.

SPECIAL NOTICES—AREA CHICAGO TERMINAL AREA NOTICE

THIS MAP SHOWS AREAS OF CONCENTRATED IFR TRAFFIC FOR THE INFORMATION AND GUIDANCE OF PILOTS OPERATING VFR IN THE CHICAGO TERMINAL AREA. VFR PILOTS INTENDING TO OPERATE WITHIN THE AREA ARE ENCOURAGED TO CONTACT CHICAGO RADAR OR TO OPERATE BELOW THE ALTITUDES OCCUPIED BY IFR TRAFFIC.

REFER TO THE LEGEND BELOW TO CORRELATE THE AREAS.



Prepared by
Coast and Geodetic Survey
U.S. DEPT. OF COMMERCE
July 1, 1965

LEGEND

- AREA OF HEAVY TRAFFIC ABOVE 3500' MSL -- VFR PILOTS ARE ENCOURAGED TO CONTACT CHICAGO RADAR FOR TRAFFIC ADVISORY SERVICE ON 119.2 mc.
- AREA OF HEAVY TRAFFIC ABOVE 2500' MSL -- VFR PILOTS ARE ENCOURAGED TO CONTACT CHICAGO RADAR FOR TRAFFIC ADVISORY SERVICE ON:
 - 125.0 mc -- area east of the extended centerline of O'HARE runway 14R/32L
 - 125.4 mc -- area west of the extended centerline of O'HARE runway 14R/32L
- AIRPORT TRAFFIC AREA -- CONTACT THE APPROPRIATE CONTROL TOWER IN ACCORDANCE WITH FAR 91.87.

APPROACH CORRIDORS

NORMAL ROUTE FOR IFR TRAFFIC

THIS TRAFFIC ADVISORY SERVICE DOES NOT RELIEVE THE PILOTS OF THEIR RESPONSIBILITY FOR CONTINUAL VIGILANCE TO SEE AND AVOID OTHER AIRCRAFT.

CHICAGO RADAR ALSO
RECEIVES ON 122.6 mc.

EXPANDED RADAR SERVICE FOR ARRIVING AND DEPARTING FLIGHTS IN TERMINAL AREAS

Certain approach control facilities are providing expanded radar service for arriving and departing flights within their terminal areas. These services are designed to:

1. Aid pilots to see and avoid other traffic by providing radar traffic information on possible conflicting traffic, and

2. Improve traffic flow by giving specific routes or headings to properly sequence arrivals.

Locations where this service is provided are listed at the end of this Notice together with information on the designated service area and frequency to be used. Aircraft with limited communication equipment who desire the service but cannot contact approach or departure control on the designated frequencies will be given service to the extent practicable on frequencies available to the pilot.

ARRIVING AIRCRAFT: Pilots of arriving aircraft should contact approach control on the assigned frequency/ies and "Request Radar Service" when reaching the perimeter of the service area and remain in communication with the approach control until advised to contact the tower.

Approach control will advise pilots of the runway to be used, wind direction and velocity, and traffic information. To establish the landing sequence, pilots will be given holding instructions if required and/or specific routes or headings to fly. When a pilot reports he has the aircraft he is to follow in sight, he will be directed to follow it. When a pilot of an IFR flight, operating in basic VFR weather conditions has a preceding aircraft which he is to follow, or the airport, in sight he will be cleared for a "visual approach." This clearance may be issued whether or not the IFR flight is operating within the control zone. With a "visual approach" clearance, the pilot operating on an IFR flight plan in VFR conditions may deviate from the prescribed instrument approach procedure and proceed to the airport with visual reference to the surface. Radar service will be terminated when aircraft are told to contact the tower and the tower will assign a landing sequence number.

DEPARTING AIRCRAFT: Departing VFR aircraft desiring traffic information should "Request Radar Service" on initial contact with ground control and advise proposed direction of flight. Following takeoff, the tower will advise when to contact departure control and the frequency to be used.

When radar contact is established, departure control will provide traffic information until radar contact is

lost or the flight has reached the perimeter of the service area. The pilot will be advised when radar service is terminated.

TRAFFIC INFORMATION: Standard radar separation will be provided between aircraft operating in accordance with Instrument Flight Rules until such time as the aircraft is sequenced and the pilot sees the aircraft he is to follow. Standard radar separation between VFR or between VFR and IFR aircraft will not be provided; instead, traffic information will be issued to the appropriate aircraft prior to the time less than 3 nmi exists between one identified VFR flight and another identified flight, either VFR or IFR. Traffic information on other observed but unidentified radar targets will be issued to the extent controller workload permits. Pilots may request radar vectors to avoid reported traffic and vectors will be given to the extent possible consistent with controller workload.

Pilot participation in this program is not mandatory but is strongly urged since the success of the program is largely dependent on full pilot participation.

THESE PROCEDURES ARE NOT TO BE INTERPRETED AS RELIEVING PILOT OF THEIR RESPONSIBILITIES TO SEE AND AVOID OTHER TRAFFIC OPERATING IN BASIC VFR WEATHER CONDITIONS, TO MAINTAIN APPROPRIATE TERRAIN AND OBSTRUCTION CLEARANCE, OR TO REMAIN IN WEATHER CONDITIONS EQUAL TO OR BETTER THAN THE MINIMA REQUIRED BY FAR 91.105. WHENEVER COMPLIANCE WITH AN ASSIGNED ROUTE OR HEADING IS LIKELY TO COMPROMISE SAID PILOT RESPONSIBILITY RESPECTING TERRAIN AND OBSTRUCTION CLEARANCE AND WEATHER MINIMA, APPROACH CONTROL SHOULD BE SO ADVISED AND A REVISED CLEARANCE OR INSTRUCTION OBTAINED.

LOCATIONS AT WHICH THE ABOVE RADAR SERVICE IS PROVIDED

John F. Kennedy Intl Airport, N.Y.

EFFECTIVE DATE: 18 AUGUST 1962

Area Within Which Service Is Provided: Approximately 25 nautical mile radius of John F. Kennedy Intl Airport exclusive of LaGuardia, Newark, and Floyd Bennett NAS control zones. **Arrival Frequencies:** Aircraft flying to the airport, contact approach control on 120.8 mc. Aircraft not equipped for two-way communication on 120.8 mc should transmit 122.7 mc and listen on 120.8 mc. **Departure Frequencies:** N and W bound 123.9 mc or 269.4 mc; all others 121.1 mc or 269.4 mc.

Wm. P. Hobby Airport., Houston, Texas

EFFECTIVE DATE: 1 SEPTEMBER 1962

Area Within Which Service Is Provided: At least 25 nmi from the airport. **Arrival Frequencies:** Aircraft flying to the airport on headings of 189° thru 037° contact approach control on 119.1 mc or 379.1 mc. Those flying headings of 038° thru 188° use 118.1 mc or 307.1 mc. Aircraft not equipped for two-way communication on those frequencies should transmit 122.5 mc and listen on the appropriate frequency specified above or a frequency/ies assigned by the facility. **Departure Frequencies:** 123.7 mc or 290.2 mc.

**El Paso International Airport,
Texas and Biggs AFB, Texas**

EFFECTIVE DATE: 1 SEPTEMBER 1962

Area Within Which Service Is Provided: At least 25 mi from the airports. **Arrival Frequencies:** Aircraft should use 118.7 mc or 307.0 mc. Aircraft not equipped for two-way communications on those frequencies should transmit 122.7 mc and listen on the appropriate listed frequency. **Departure Frequencies:** The tower will advise pilots of departing VFR flights who have requested the service when to contact departure control and the frequency to be used.

Los Angeles International Airport, California

EFFECTIVE DATE: 22 SEPTEMBER 1964

Area within which service is provided: 25 nmi. **Arrival Freq:** 045-224 degrees inbound, 119.3 or 381.6 mc. 225-044 degrees inbound, 124.9 or 260.0 mc. If not so equipped,

trans 122.7 mc and guard above freq or LAX VOR. **Departure Freq:** tower, 118.9 mc. then departure control on 125.2 or 385.4 mc when outbound 225-045 degrees, 124.3 or 303.2 mc, 045-225 degrees.

Weir-Cook, Indianapolis, Indiana

EFFECTIVE DATE: 14 SEPTEMBER 1964

Area within which service is provided: 20 nmi, 4000' and below. **Arrival Freq:** 118.5 mc. **Departure freq:** ground control, 121.9 mc then Indianapolis Departure Radar Service, 121.3 mc. Enroute aircraft contact Indianapolis Terminal Radar Service, 118.5 mc.

Logan International Airport, Boston, Mass.

EFFECTIVE DATE: 17 FEBRUARY 1965

• **Area in which service is provided:** Approximately 25 nautical mile radius of Logan International Airport. **Arrival frequencies:** Inbound on 035° through 140° use 126.5 or 281.5 mcs. Inbound on 141° through 034° use 120.6 or 203.1 mcs. Aircraft not so equipped should transmit on 122.5 mcs. and listen on the appropriate frequency. **Departure frequencies:** 119.1 or 343.6 mcs.

Friendship Intl Airport, Baltimore, Maryland

EFFECTIVE DATE: 11 February 1965

AREA IN WHICH SERVICE IS PROVIDED: Approximately 15 mi radius. **Arrival freq:** In bound on 101° thru 281° use 125.9 mc or 307.9 mc. Inbound on 282° thru 100° use 121.1 mc or 360.8 mc; **Departure freq:** 120.4 or 381.4 mc when advised by tower.

NEW AND PERMANENTLY CLOSED AIRPORTS

(Including Heliports and Seaplane Bases)

New Airports

The following new airports have been activated and will be included in the next Airport Directory effective December 9, 1965:

Arizona

Grand Canyon, Grand Canyon National Park
Seligman, Rubel Ranch 23W

Arkansas

England, Bredlow 6.5W
Eudora, Brown 6N
Salem 1S
Wynne 1E

California

Death Valley Junction, Amargosa Arpt. Adj. W
Dixon, Maine Prairie 4S
El Monte, Los Angeles-El Monte Adj N
Fallbrook, Fallbrook Community Arpk 2S
Huntington Beach, Meadowlark Arpt
Kennedy Meadows, Sacatar Meadow In City
Lower Lake, Asbill Valley Ranch 3 ESE
Maxwell, Moller-0.5N
Merced, Bellevue 5N

Colorado

Fort Morgan, Ponderosa Fld 1.8NW
Mone Vista, Comin 4N
Pueblo, Edenway 3N

Florida

Cottondale 1S
Hudson, Hodnett 2.5NE
Jasper, Kennedy 1ESE
Live Oak, Suwannee Co. 2W
Wimauma, Del E. Webb 4W

Delaware

Odessa, Evergreen Acres 3N
Delmar, Delmar Stateline Adj E

Idaho

Yellow Pine, Reed Ranch 11SW

Illinois

Amboy, Albrecht 5S
Athens, Hopwood Adj N Petersburg
Burlington, Arlo W. Peplow 2SE
Chatsworth 1S
Columbia, King 3NW
Greenville 3S
Hillsdale, Ropp Arpk Inc 2.8S
Makanda, Giant City State Park 2NE
Monticello, Allerton Park 2SW

Rockford, Lamb 7NNW

Rosemont, Flying Carpet Motor Inn 1SW Park Ridge
Watseka, Looker Adj E

Indiana

Crown Point, Klinedorf 1NW
Elkhart, Mishawaka Pilots 3SW
Grandview, Glenmore Adj W
Ligonier Adj S
Madison Mun 4W
Salem Mun 2W

Iowa

Ladora, Hawkins Adj W
Massena, Swain 4.6S
Paulliana Muni 1.0E
Sutherland, Jalas 1E

Kansas

Arkansas City, Strother Fld #1 6SE Winfield
Caldwell 1E
Onago Adj NW
Prairie View, Van-Pak Adj E
Pretty Prairie, Ulrich 3NE
Sharon Springs, Lacey
Troy 2W

Kentucky

Mount Sterling, Montgomery 2W
Williamsburg-Cumberland Falls 3N

Louisiana

Mound, Yerger 1NE
Oak Grove 1SW
Patterson, Tibbs 2W
Slidell 5 NW

Maine

Brunswick, Old Seaplane Base 1.5W
Cape Elizabeth, Spurwink Farm 6SSE of Portland
Island Falls, Barker Ridge 1S
Machias, Machias Valley 1.2SW
Minot, Hemond 8S
Winthrop Seaplane Base 1.5E
Union, Clark Field Adj NW

Maryland

Lake Shore, Mountain Road
Sykesville, Mape 1SW
Thurmont, Leisner 1SSE

Massachusetts

Danvers, Robbins Fld 1WSW
Pepperell, Sports Center 2.5NE
Shirley 1SSE

Michigan

Elonidas, Level Acres Farms 1N
Leland, North Manitou Island 14NW
Onsted, Loars Fld 0.5 SE
Ravenna, Streams Arpk 5N
Rockford, Wells 3E
Silkirk, Thompson Adj E
Vanderbilt, Sunlenn 2NE

Minnesota

Bowstring Muni
Kimball 1NE
Maple Lake 1NE
Maple Plain, Maple Adj SW
Silver Bay Muni 7SW

Missouri

Cuba, Highland Hills 1NW
Gallatin, Froman 2W
Gravois Mills, Adkins 3SE
House Springs, Moders
Powell, Cloud Airfld 1NW
Rolla, Morgan 3SE
St. Clair Meml 2N
Thayer Memorial 1.5W
Wappapelo, Davis Air Ranch 3SW

Montana

Chinook, Hebbleman 8.5 SE
Havre, Davis 9 NE
Havre, Schnitzmeir No. 1 9N
Hogeland Adj W
Morgan (Loring) 14N of Loring

Nebraska

Arthur, Hawkins Ranch 6W
Bassett, Robinson and Sons 30SE
Beaver City, Clason 4.5SE
Benkelman, Hoppys 3.3NW
Callaway, Paul Ridder Ranch 1S
Elkhorn, St. Johns Seminary 2NW
Gurley, Egging 4.5SE
Harrison-Skyranch 2.3 NNE
Kennedy, T. Ox Yoke Ranch 4ESE
Madrid, Martins 6NNW
Niobrara, Mayberry 6ESE
North Platte, Harden Airstrip 4S
Ogallala, Allen 7SE
Palisade, Rich Field 6S of Hamlet
Springview, Patterson 1W

Nevada

Goldfield 1N
Vya, Sheldon Antelope Refuge 16 NE

New Hampshire

Lancaster 0.5 NW
Lancaster, Grabor Airstrip 5E

New Mexico

Espanola Valley 3NE
Reserve 5.5WSW

New York

Albany, Tallent Fld 3NE of Bethlem
Canaan 2SE
Castleton-On-Hudson 1S
Kerhonkson, Platts Brookside 4NNW
Lafargeville, Tims Angus Farm 3E
Millbrook, Sky Acres 6SSW
New Salem 2SSE
Poestenkill, Sicbo Adj W
Schroon Lake 5 NE

North Carolina

Advance, Strawberry Hill 3NW
Asheboro Muni 4SW
Bladenboro Adj E
Bules Creek, Stewart 2SE
Raeford Muni 5NE
Silver City 3SW
Wade, Gordon 2E

North Dakota

Maddock, Rice's Airpark Adj SW.
Medora, Annear 21.5NNW
Medora, Buddy Ranch 1NE
Dunselth, Intl Peace Gardens 1.2N
Temvik, Frank Lawler 11W

Ohio

Canton, Martin Fld 4NE
Grove City, Montoneys 1N
Lexington, Ross Fld 4.5W
Medina 3NW
Nashport, Varner 3S
Newton Falls, Pike Plaza Motel 2N
Norwalk 2N
Reynoldsburg, Snook Fld 2.3NE
Strongsville Arpk 1W
Sunbury, Sunair 3NW
Waldo, Wiseman Fld 1S
Wilberforce, Central State College 1 SW

Oklahoma

Broken Arrow, 81st Street Arpk 4WSW
Cashion 3.5NW
Cherokee, Hadwiger 1W
Crescent, Flying M 3NE
Hollis, Barnes 1NW
Hollis, Masters 3.5E
Stillwell 1N

Oregon

Hillsboro, Olinger Strip 1N
Homestead, Oxbow 1.6S
Independence, Monmouth 0.5NW
Merrill, M.A. Long Ranch 5W
Vernonia Airfld 2W

Pennsylvania

Lehighton, Carbon County 3SW

South Carolina

Landrum, Fairview

South Dakota

Aberdeen, Schnuerle 1SW
Burke Muni 1W
Sturgis 4E

Tennessee

Rogersville, Hawkins County 7NE

Texas

Ballinger, Pascal Allison Ranch 15S
 Bay City, Cole Arpk 2N
 Brady, Curtis Ranch Field 13NNE
 Cibolo, Kardys 2NNW
 Converse, Kneupper Fld 1NE
 De Leon Muni 1SE
 Devine, Adams Ranch 8W
 Dickinson, T and C Drop Zone 1SW
 Ft. Worth, Blue Mounl 8N
 Freeport, Commodore Cove 6NE
 George West, Live Oak County 1/2NW
 Hale Center, Laney Farm 4NW
 Houston, Welser 8SE
 Katy, KaBrook Flying Service 3 NW
 League City, S and S Patrol Field 1SW
 Leakey, Flying J 10 SW
 Lewisdale, Black Mark Strip 4SW
 Oakville, Reagan Ranch 1S
 Pandale, Joe Chandler Guest Ranch
 Paris, Flying Tiger 5W
 Point, Sabine River Authority 6S
 Port Lavaca, Kimbriel 11SW
 Prairie View, Prairie View College 1W
 Rankin 1W
 Roma, Falcon State Park 12NW
 Shiro, Flying D Ranch 3 NE
 Stratford Fld 1NE
 Tivoli, Gulf Coast 1NE
 Veribest, Three Rivers Flying Service 2.5 SE
 Waco, Flying Heart Ranch 2.3E

Utah

Panguitch Muni 8NE

Virginia

Clarksville, Merifield 4 SE
 Monterey, Hannah 1SW

Washington

Alderwood Manor, Martha Lake 2.6S
 Harrington, Hanes 1NE
 Kent, Crest Arpk 6ESE
 Quillayute, Quillayute State Emergency 1SW
 Quincy 2WSW
 Ritzville, Franz Ranch 16SW
 Wenatchee, Fanches Field

West Virginia

Ronceverte, Boones Field 1N

Wisconsin

Appleton, Outagamie County 6WNW
 Birchwood, Tag-A-Long 2SSW
 Elkhorn, Trostel Fld 2SE
 Howard, Bay Shore 8 NW of Green Bay
 Lake Geneva, Wal-Co-Wis Farms 2.5S
 Medford, Taylor County 3.3SE
 New Glarus, Luft Landing Strip 1SE
 Oconto Falls, Larson Studio 2E
 Sarona, Gabriel 4S
 Stroughton Adj E
 Wyeville, Wings Over Holiday 2NE

Wyoming

Tensleep 12S

Heliports**California**

Berkeley Mun Heliport 2W

New Hampshire

Petersborough, Electropad 3N
 Suncook, Iconic 8NE

Texas

Dallas, Kitz-Kopters Heliport 7NW
 San Antonio Intl Arpt Helipad 7N
 San Antonio Motel Hell-Stop 8NE

Closed and Abandoned Airports

The following airports have been abandoned (a) or permanently closed to public use (c) and should be deleted from charts and records:

Alabama

Flomation 2NE(c)

Arizona

Bouse, Utting Siding 9SE (c)
 Chandler, Riggs 5SE (c)
 Grand Canyon (South Rim) 12S (c)
 Hereford, Thompson Intl 1 SE (c)
 Maricopa, Hine Arpt 1SE (c)
 Mesa, PDQ Airways Hellspot Adj W (a)
 Stanfield, Potters Fld Adj SE (c)
 Tempe, Sanders 4S (c)

Arkansas

England, Capps 1.5 N (c)
 Little Rock, Worth James 4SW (c)
 Wilson 1W(c)

California

Colusa 1SW (c)
 Needles-Riverview 1S (a)
 Oakland, Exposition Parking Lot Heliport (a)
 Ridgecrest 1 SW(a)
 Thousand Oaks, Rancho Conejo (a)

Colorado

Arlington, Ronald Anderson Ranch 14NW(c)

Connecticut

East Windsor, Balch's 1NW (c)
 Hazardville, Laurie Fld Adj S (c)

Delaware

Georgetown, Joseph Arpt (c)

Florida

Fort Myers, Cape Coral 5W(c)
Ft. Lauderdale, Bradley Fld (a)
Jasper, Kennedy Airstrip 1ESE(c)
Miami, Aero County Club 8SW(a)
Naples, Gilden Gate 6NE(c)

Georgia

Jesup, Redland 4NW(c)

Idaho

Bruneau 3S(a)

Illinois

Athens, Hopwood N of Petersburg(c)
Blandinsville, Willow Grove 3SE(c)
Lukachukai 2SW(c)
Waukegan 3NW(a)

Indiana

Dyer, Triangle 1N(a)

Iowa

Central City, Wassmer 3SW(c)
Massena, Swain 5S(c)
Oakland, Kimberly adj NW(a)
Sidney, Knox 3SW(c)

Kansas

Gould City(c)

Montana

Alzado, Foster adj NW(c)
Grassrange N(Bar) Ranch 13 NE(c)
Ovando, Clearwater(a)

Nevada

Carlin Adj E(c)
Goldfield (Old)(a)

New Jersey

Woodstown 8N(a)

New York

Ithaca Muni 1NW(a)
Lancaster, Scott Field 6E(c)
Monticello, Sullivan Co. 1S(a)

North Carolina

Middlesex, Stone(c)
Monroe, Shute Muni 3N(c)

North Dakota

Carson, Broadhead 8 S(a)
Cavaller, Magnuson 5 NE(c)

Durbin Adj NW(a)

Russell, Aerial Spraying Service 3 SE(c)

Ohio

Bellevue, Midway 5 NE(a)
Lexington, Ross Field 8W(c)
Nevada, Coons 1NE(a)
North Randall, Thistledown Adj NW(c)

Oklahoma

Walters, Walters Turnpike 5.5 W(a)

Oregon

Boring 1 E(a)
Brookings, Crissey-State Line 4 SE(a)
Heppner, Kinzua Corp. 0.5NNW(c)
Meacham 1SE(c)
Pendleton, Woodpecker 2 NE(a)

Pennsylvania

Malvern, Macarlo 3NW(a)
Tionesta, Benningers Sky Ranch 25E(c)

South Carolina

Latta Adj W(a)

South Dakota

Coleman, Sioux Valley 1E(c)
Ipswich, Williams Ranch 8S(a)

Tennessee

Jacksboro, Campbell County 1SE(a)

Texas

Brenham Muni 1SE(a)
Dallas, Park Cities 9NW(a)
Garwood 1W(c)
Marble Falls, Blue Lake Airstrip(c)
Randleman, Hackett Fld 4NE(a)
Rochelle, Price Adj W(c)
San Antonio, Hedrick Arpk 6NE(a)
Wimberley, Eagle Rock Ranch 2NNW(c)

Vermont

Waitsfield, Estey Airpark 2 NE(c)
Waterbury 2 NNE(c)

West Virginia

Clarksburg, Patten Fld 6SE(a)
Culloden(a)

Wisconsin

Appleton, Outagamie County 2NE(a)
Hayward, Frontier Seaplane Base ESE(a)
Lake Tomahawk, Donlin's Resort of the North Sea-
plane Base 2WNW(a)
Mauston, Woodside Ranch 4E(a)

MILITARY AERIAL REFUELING TRACKS

Military aircraft conduct refueling operations throughout the continental United States normally between 12,000 feet MSL and FL 240 on an IFR flight plan at assigned altitude(s). Refueling aircraft have right of way over other aircraft in accordance with FAR 91.67(c)

Name	Location	Ingress			Egress		
		Navaid	Bearing Degrees	Distance Miles	Navaid	Bearing Degrees	Distance Miles
Black Warrior.....	Washington, Idaho.....	GEG VORTAC.	224	54	MLP VOR.....	164	109
Border Town.....	North Carolina, South Carolina, Virginia, Georgia.	SPA VORTAC. LYH VORTAC.	233 340	47 17	LYH VORTAC. SPA VORTAC.	340 233	17 47
Glass Jar.....	Minnesota, Wisconsin.....	RWY VOR..... RWF VOR.....	260 140	26 30	RWF VOR..... ALO VORTAC.	140 034	30 38
Golden Heart.....	Kansas-Nebraska.....	ICT VORTAC. LBF VORTAC.	262 005	65 42	LBF VORTAC. ICT VORTAC.	005 262	42 65
Golden Heart Lima.....	Kansas-Nebraska.....	ICT VORT AC. HCT VORTAC.	262 003	65 78	HCT VORTAC. ICT VORTAC.	003 262	78 65
Gunstock Alpha.....	New York, Pennsylvania.....	BUF VORTAC. ALB VORTAC.	230 259	41 36	ALB VORTAC. BUF VORTAC.	259 230	36 41
Gunstock Bravo.....	New York, Pennsylvania.....	ERI VORTAC. ALB VORTAC.	081 244	16 55	ALB VORTAC. ERI VORTAC.	244 081	55 16
Leak Proof.....	Oregon.....	DLS VORTAC. REO VOR.....	217 173	33 63	REO VOR..... DLS VORTAC.	173 217	63 33
Little Bug Alfa.....	South Dakota-North Dakota.....	ABR VOR..... DIK VORTAC.	158 333	53 78	DIK VORTAC. ABR VOR.....	333 158	78 53
Little Bug Bravo.....	South Dakota-North Dakota.....	ABR VOR..... DIK VORTAC.	174 320	66 69	DIK VORTAC. ABR VOR.....	320 174	69 66
Maple Tree Alpha.....	Maine, New Hampshire, Vermont.....	ALB VORTAC. PQI VOR.....	049 236	104 34	PQI VOR..... ALB VORTAC.	236 049	34 104
Maple Tree Bravo.....	Maine, New Hampshire, Vermont.....	ALB VORTAC. PQI VOR.....	060 211	102 45	PQI VOR..... ALB VORTAC.	211 060	45 102
Mud Road Alfa.....	Wisconsin, Minnesota, South Dakota.....	GRB VORTAC. ABR VOR.....	320 039	115 77	ABR VOR..... GRB VORTAC.	039 320	77 115
Mud Road Bravo.....	Wisconsin, Minnesota, South Dakota.....	GRB VORTAC. ABR VOR.....	311 052	102 65	ABR VOR..... GRB VORTAC.	052 311	65 102
Private Eye.....	Louisiana, Mississippi, Tennessee.....	MSY VORTAC. MEM VORTAC.	222 212	79 63	MEM VORTAC. MYS VORTAC.	212 222	63 79

LOW ALTITUDE VFR MILITARY OPERATIONS

The military services have a continuing requirement to conduct VFR low altitude training flights at and below 1,500 feet above the surface in excess of 300 knots indicated airspeed. These flights are conducted only when weather conditions are equal to or better than 3,000 feet ceiling and five miles' visibility.

The routes used by these training flights are selected to avoid control zones, control zone extensions, and airport traffic areas; and to the extent possible, uncontrolled airports by three statute miles, control areas, and transition areas.

The USAF Aeronautical Chart and Information Center is publishing a narrative description in booklet form and a chart depicting these routes. The initial publication was effective March 24, 1963, and will be issued

every 28 days thereafter. The chart is comprised of one large sheet with the eastern United States on one side and the western United States on the other. Both the chart and narrative route description booklet are available to the general public as a brochure by subscription on request to the Director, Coast and Geodetic Survey, 14th and Constitution Avenue, N.W., Washington D.C. 20230. Subscription requests should be for the "USAF/USN Flight Information Publication—Planning, Section I-A, Military Training Routes." In addition, each FSS will have this publication available for pre-flight pilot briefings. Pilots should review these charts to acquaint themselves with those routes that are located along their route of flight and in the vicinity of the airports from which they operate.

BOEING LOW LEVEL IFR OPERATIONS

The Boeing Company will be conducting low level weather testing with B-52 aircraft under IFR conditions along the routes designated as "BIG BOY" and "CUTE COOKIE" until March 31, 1966. These routes will be flown at airspeeds between 260K and 400K indicated and at altitudes between 500 above the terrain and the Minimum Obstruction Clearance (MOCA) as given in the route description, except when the specified USAF Oil Burner routes are in operation. The route widths are 2½ statute miles either side of centerline. Flying activities will be conducted between the hours of sunrise and sunset seven days a week. The routes may be flown in either direction.

BIG BOY route—From 38°43'N, 99°49'W; to 38°59'N, 100°33'W MOCA 3,800' MSL; to 38°59'N, 101°10'W MOCA 4,200' MSL; to 38°33'N, 101°55'W MOCA 4,800' MSL; to 38°00'N, 101°55'W MOCA 4,800' MSL; to 37°35'N, 101°59'W MOCA 4,800' MSL; to 37°09'N, 101°57'W MOCA 4,800' MSL; to 36°38'N, 102°21'W MOCA 5,300' MSL; to 36°42'N, 103°30'W MOCA 6,800' MSL; to 36°30'N, 104°30'W MOCA 9,900' MSL.

When exiting the route at 36°30'N, 104°30'W aircraft shall turn left, climbing so as to cross 36°16'N, 104°28'W at 10,000' MSL, then continue climb direct so as to cross 36°16'N, 104°00'W at 17,000' MSL.

Altitude exceptions:

(1) When "BULL RING" oil burner route is operational, aircraft shall maintain 7,000' MSL between 38°43'N, 99°49'W and 38°59'N, 100°55'W. Westbound

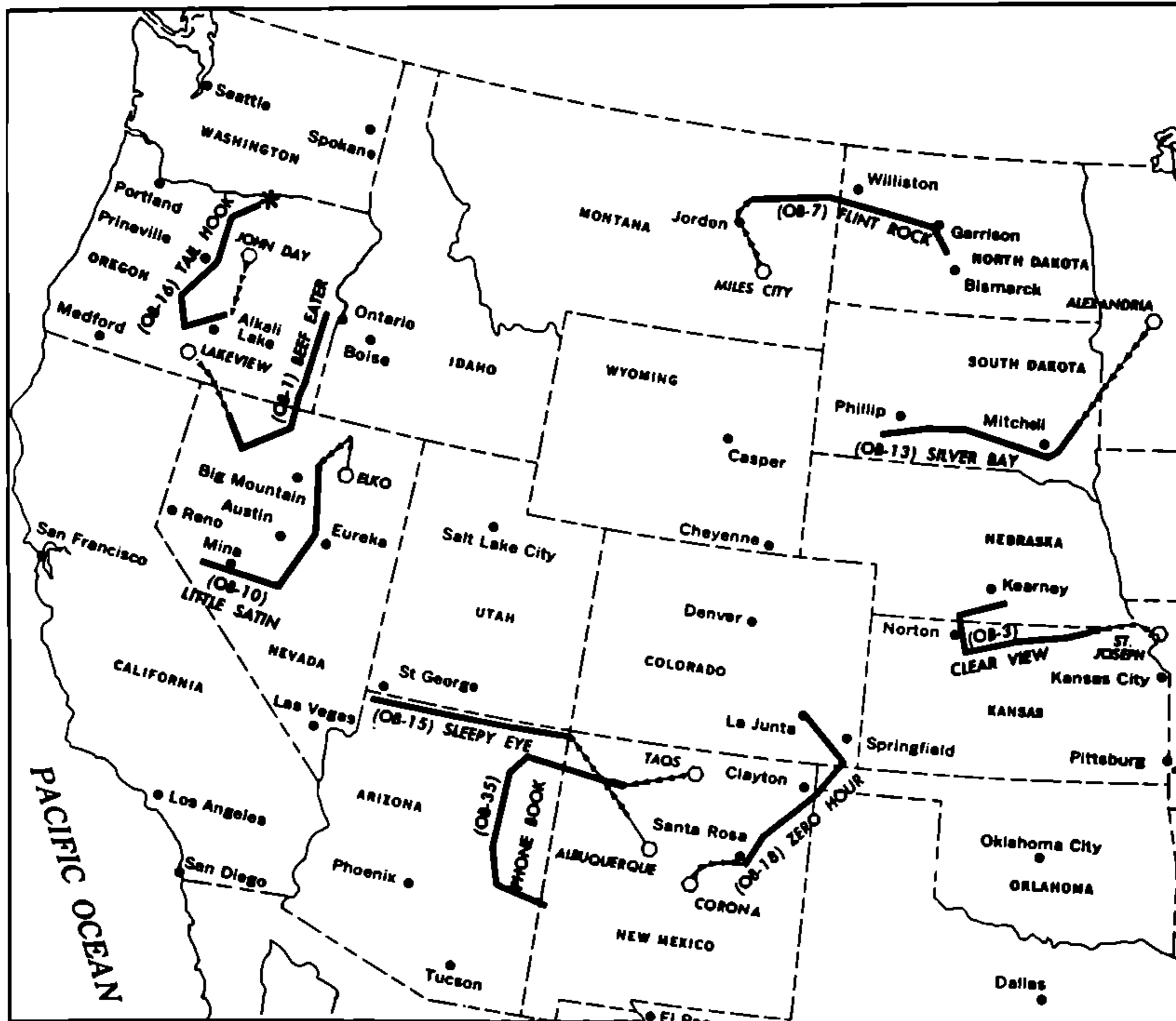
aircraft shall descend after passing 38°59'N, 100°55'W so as to cross 38°59'N, 101°10'W at or below 4,800' MSL.

(2) When "ZERO HOUR" oil burner route is operational, westbound aircraft shall after passing 37°09'N, 101°57'W, climb so as to cross 36°38'N, 102°21'W at 8,000' MSL and maintain 8,000' MSL to 36°41'N, 103°15'W then start to climb so as to cross 36°42'N, 103°30'W at or below 9,900' MSL. Eastbound aircraft shall after passing 36°42'N, 103°30'W climb or descend so as to cross 36°41'N, 103°15'W at 9,000' MSL to 36°38'N, 102°21'W, then start descent to 5,300' MSL or below.

CUTE COOKIE route—From 38°43'N, 99°49'W; to 38°59'N, 100°33'W MOCA 3,800' MSL; to 38°59'N, 101°10'W MOCA 4,200' MSL; to 39°35'N, 101°14'W MOCA 4,300' MSL; to 40°18'N, 101°15'W MOCA 4,300' MSL; to 40°30'N, 101°06'W MOCA 4,300' MSL; to 41°05'N, 101°34'W MOCA 4,400' MSL; to 42°12'N, 99°52'W MOCA 4,500' MSL.

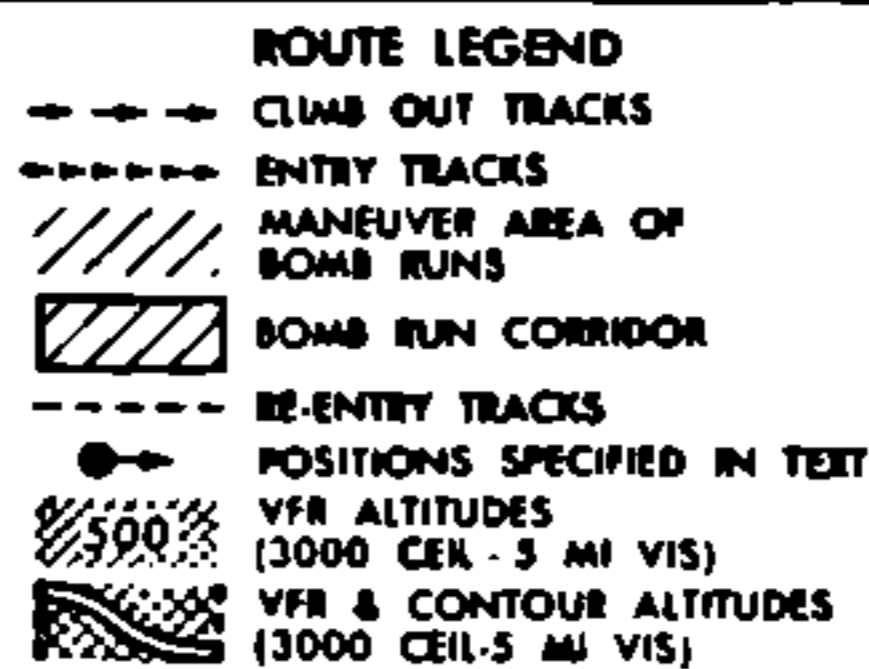
When exiting the route at 42°12'N, 99°52'W, aircraft shall turn right climbing so as to cross 42°12'N, 99°45'W at 5,000' MSL, then continue climb direct so as to cross the O'Neill, Nebraska VORTAC 233/40 at 6,000' MSL.

Altitude exception: When "BULL RING" oil burner route is operational, aircraft shall maintain 7,000' MSL between 38°43'N, 99°49'W and 38°59'N, 100°55'W. Westbound aircraft shall descend after passing 38°59'N, 100°55'W so as to cross 38°59'N, 101°10'W at or below 4,300' MSL.

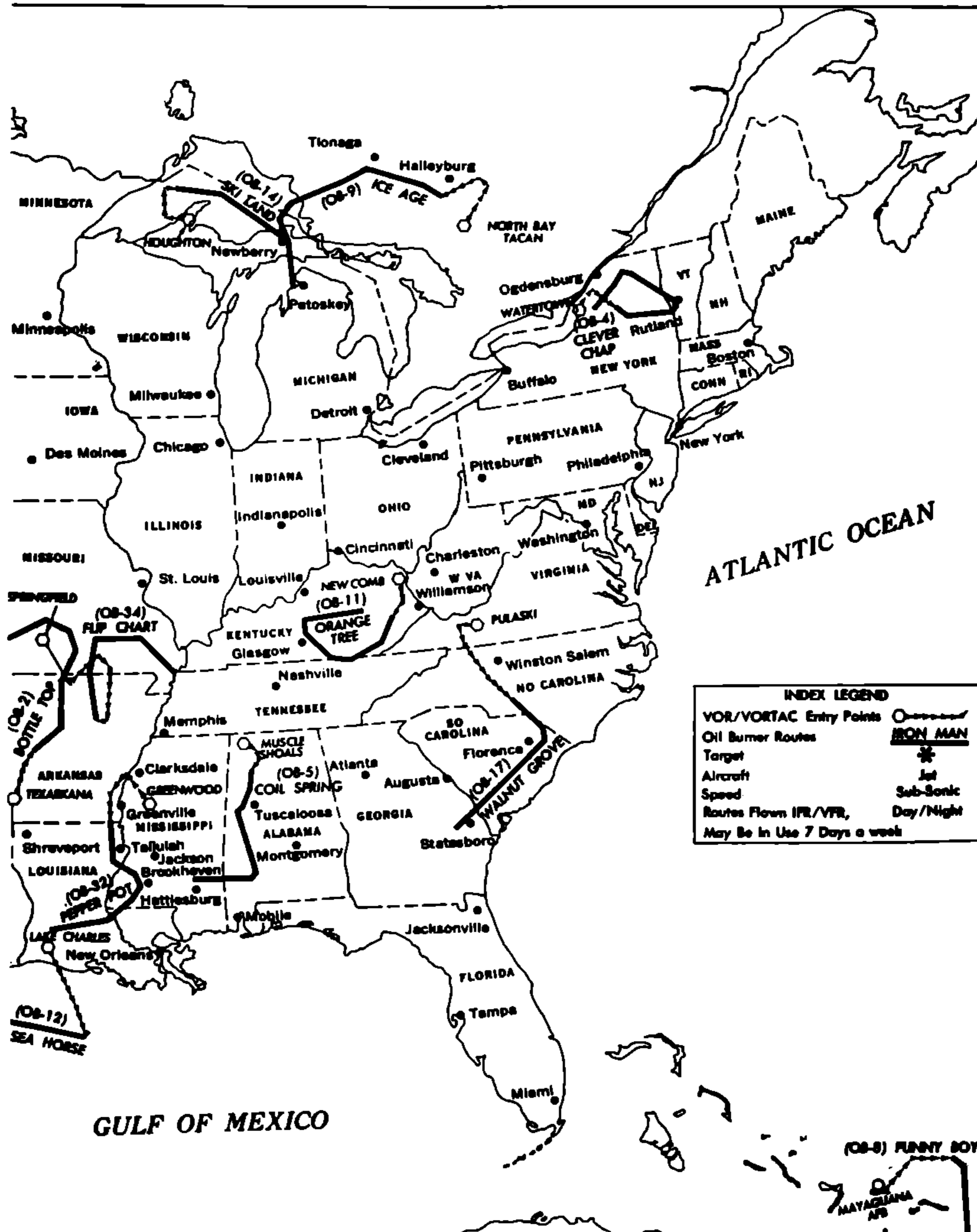


OIL BURNER ROUTES

MILITARY LOW-LEVEL OPERATION "OIL BURNER": The USAF and the U.S. Navy conduct low-level navigational/bombing training flights in jet aircraft in both VFR and IFR weather conditions along the routes shown in the following pages. Operations are contained within 9 nautical miles on either side of the centerline except that on the VFR segments they will be contained within 4 nautical miles of the centerline. When route widths shown on the chart are less than those indicated above, the operation will be confined to the route width shown. Aircraft will operate at the altitudes specified on the route charts. Near the end of the low-level navigation portion of the route, aircraft will conduct simulated bomb release maneuvers within a "Bomb Run Corridor" at and between the altitudes shown. "Short Look" and "Lay Down" bomb runs are generally conducted from 4,000 to 6,000 feet MSL. "Long Look" bomb runs are generally conducted from 18,000 to 21,000 feet MSL. On some route segments when the weather conditions are 8,000 feet ceiling and 5 miles' visibility or better, aircraft may descend to an altitude of not less than 500 feet above terrain in daylight hours or 800 feet above terrain during hours of darkness. Flights are conducted only during the times specified for each route. The current operational status of a particular route is included in scheduled weather broadcasts or may be obtained by calling a Flight Service Station near the route. Revised information is underlined.



November 11, 1965

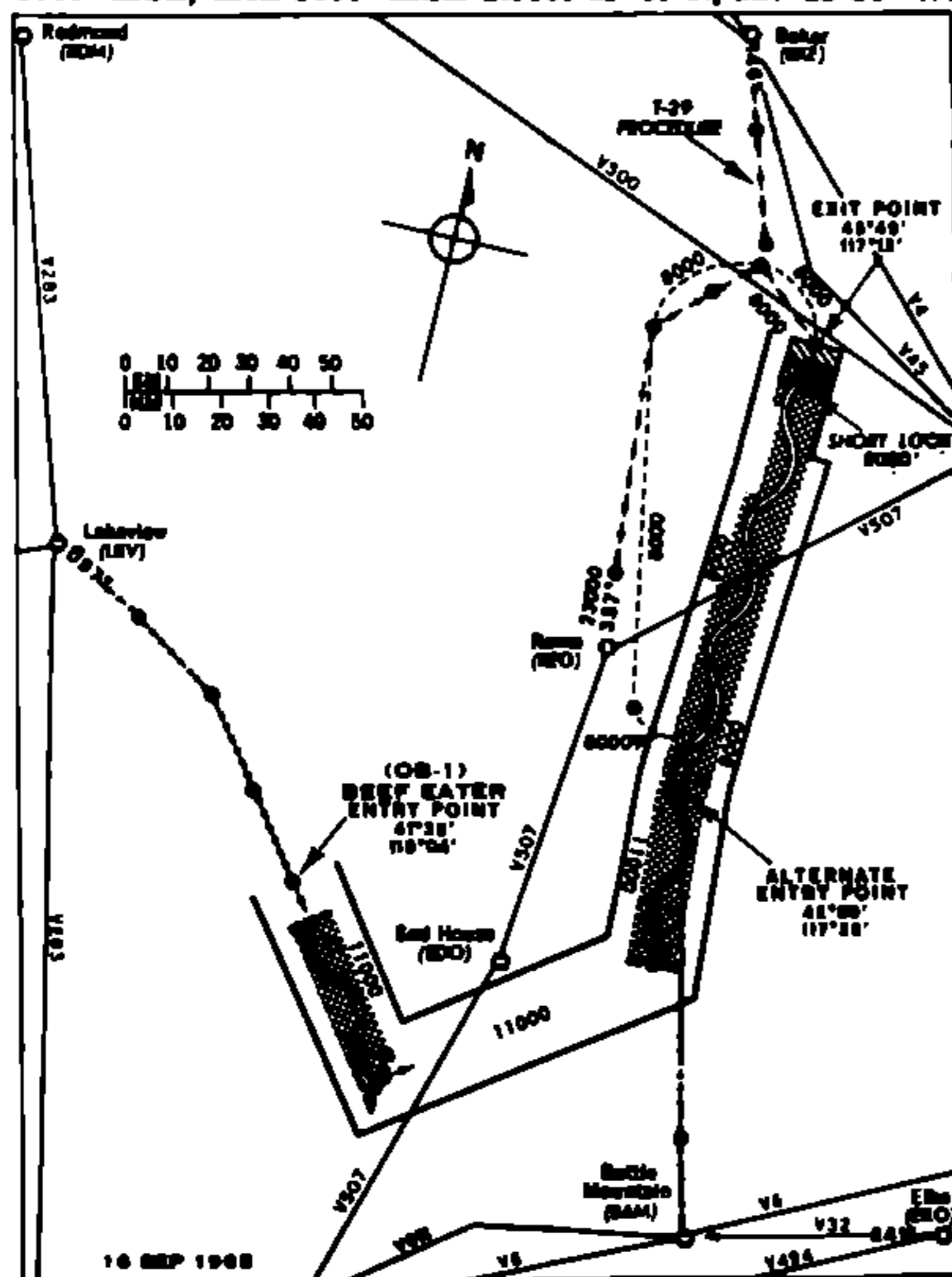


OIL BURNER ROUTES

NEVADA/OREGON BEEF EATER OB-1

Revised Effective August 5, 1965

Aircraft shall cross the Lakeview, Ore. VORTAC (reporting point) at FL 230, or as assigned by ARTCC; then maintain assigned altitude via the Lakeview 097° radial until 22 NM east of the Lakeview VORTAC (42°20'N, 120°04'W); then descend direct to cross 42°07'N, 119°39'W at or below FL 230; then descend direct to cross 41°49'N, 119°21'W at or above 16,000' MSL; then descend direct to cross the entry point of the low level route at 41°32'N, 119°04'W at 11,000' MSL, then 11,000' MSL direct 40°55'N, 118°27'W, then 11,000' MSL direct 41°31'N, 117°20'W, then 11,000' MSL direct 42°09'N, 117°22'W; then descend to cross 42°26'N, 117°20'W at 8000' MSL, then 8000' MSL direct 43°40'N, 117°13'30''W.



Short Look—After passing 43°40'N, 117°13'30''W aircraft shall maintain 8000' MSL thru the bomb run corridor (4 NM either side of centerline from 43°40'N, 117°13'30''W to 43°48'N, 117°18'W). After exiting the route at 43°48'N, 117°13'W aircraft shall maintain 8000' MSL direct 44°03'N, 117°31'W; then climb direct to cross

43°55'N, 117°44'W (reporting point—Beef Eater 1) at 10,000' MSL; then climb direct to cross 43°45'N, 117°59'W at or above 14,000' MSL; then climb direct to cross 42°51'N, 117°54'W at FL 230, then maintain FL 230 via the Rome 337° radial to the Rome, Oregon. VOR.

Re-Entry—After exiting the route at 43°48'N, 117°13'W aircraft shall maintain 8000' MSL direct 44°03'N, 117°31'W, then 8000' MSL direct 43°45'N, 117°59'W, then 8000' MSL direct 42°24'N, 117°41'W, then 8000' MSL to re-enter the route via direct 42°26'N, 117°20'W.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3000', visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 800' above the immediate terrain between the following points: from 41°25'N, 118°57'W to 40°55'N, 118°27'W and from 41°31'N, 117°20'W to 43°45'N, 117°13'W. VFR operations will not be conducted during the hours of darkness.

Alternate Entry—Aircraft shall cross the Elko VORTAC 241/54 DME fix (Battle Mountain VOR) (reporting point) at FL 230 or as assigned by ARTCC, then maintain assigned altitude direct 40°55'N, 117°01'W; then descend direct to enter the route at 42°09'N, 117°22'W at 11,000' MSL.

Route Width—The route width from 43°25'N, 117°15'W to 43°48'N, 117°13'W is reduced to 4 NM on the east side of the centerline. The route width of the VFR and Contour segment is also reduced to 2 NM from centerline on the west side from 43°15'N, 117°15'W to 43°35'N, 117°14'W.

T-29 Procedure—Aircraft shall cross the Elko, Nevada, VORTAC 241/54 (Battle Mountain VOR) (reporting point) as assigned by the ARTCC; then proceed via the alternate entry route to 43°48'N, 117°13'W exit point of the bomb run corridor; then maintain 8,000' MSL direct 44°03'N, 117°31'W; then climb direct to cross 44°03'N, 117°33'W at or below 10,000' MSL; then direct via Baker, Oregon, VORTAC 146 radial to cross Baker 146/19 (44°32'N, 117°42'W) at 14,000' MSL or as assigned by the ARTCC; then maintain assigned altitude direct Baker VORTAC (44°51'N, 117°48'W).

Hours of Operation—24 hours daily, 7 days a week.

ARKANSAS/MISSOURI BOTTLE TOP OB-2

Revised Effective June 24, 1965

Aircraft shall cross the Texarkana, Ark. VORTAC 006/15 at FL 190 or as assigned by ATC; then proceed outbound on the 006° radial descending so as to cross 34°31'N, 93°48'W, at 6000' MSL; direct descending so as to cross 34°35'N, 93°43'W, at 4000' MSL; then direct so as to cross the route entry point 34°40'N, 93°37'W at 2800' MSL, then 2800' MSL direct 35°17'N, 92°51'W; then climb direct so as to cross 35°21'N, 92°51'W, at 4100' MSL, then 4100' MSL direct to 36°28'N, 92°55'W; then descend direct so as to cross 36°30'N, 92°52'W, at 2500' MSL, then 2500' MSL direct 37°06'N,

02°23'W, then 2500' MSL direct 87°30'N, 02°34'W; then climb direct so as to cross 37°33'N, 02°35'W at 3000' MSL, then 3000' MSL direct 37°49'N, 03°23'W, then 3000' MSL turn left direct 37°33'30''N, 04°01'W.

Short Loop—After passing 37°33'30"N, 94°01'W, aircraft shall climb so as to cross 37°27'N, 94°16'W, at 6000' MSL, maintain 6000' MSL thru the bomb run corridor (4 NM either side of centerline from 37°33'30"N, 94°01'W, to 37°21'N, 94°31'W). After exiting the route at 37°21'N, 94°31'W maintain 6000' MSL direct 37°16'N, 94°49'W, then 6000' MSL direct 37°14'N, 94°56'W, then 6000' MSL direct Oswego, Kans. VOR, maintain 6000' MSL direct 37°16'N, 95°28'W; then start climb to FL 230 direct 37°22'N, 95°42'W; turn left continuing climb direct 37°17'N, 95°52'W; direct cross 37°13'N, 95°53'W at 16,000' MSL; direct cross Bartlesville, Okla. at FL 230.

Re-Entry—After completing the Initial Short Look bomb run, aircraft that are scheduled to execute an additional bomb run shall, after exiting the route at 37°21'N, 94°31'W, maintain 6000' MSL, turn right to 37°32'N, 94°41'W, then 6000' MSL direct 37°41'N, 94°20'W; then descend so as to cross 37°48'N, 94°08'W at 3000' MSL direct to 38°00'N, 93°34'W, then 3000' MSL turn right to 37°49'N, 93°23'W, thence via the published route.

VFR between the IFR altitudes indicated on the chart and 800' above the immediate terrain between the following points: from 35°17'N, 92°51'W to 36°05'N, 92°53'W and from 36°38'N, 92°45'W to 37°30'N, 92°34'W. VFR operations will not be conducted during the hours of darkness.

Alternate Entry—Aircraft shall cross the Vichy, Mo. VORTAC 012/25 at 15,000' MSL or as assigned by ATC. Descend direct so as to cross 38°19'N, 92°08'W at 8000' MSL; then at 8000' MSL direct to 38°13'N, 92°22'W; then descend so as to cross 38°08'N, 92°34'W at 4000' MSL; then continue descent so as to cross 37°49'N, 93°23'W at 3000' MSL. Thence via published route.

Route Width—The route width from 34°40'N, 93°37'W to 35°21'N, 92°51'W and from 36°05'N, 92°53'W to 37°00'N, 92°23'W is reduced to 4 NM either side of centerline and 4 NM on the south side of centerline from 37°33'N, 92°35'W to 37°21'N, 94°31'W.

Hours of Operation—0100Z to 1400Z, 7 days per week.

KANSAS/NEBRASKA/SOUTH DAKOTA

BULL RING OB-30

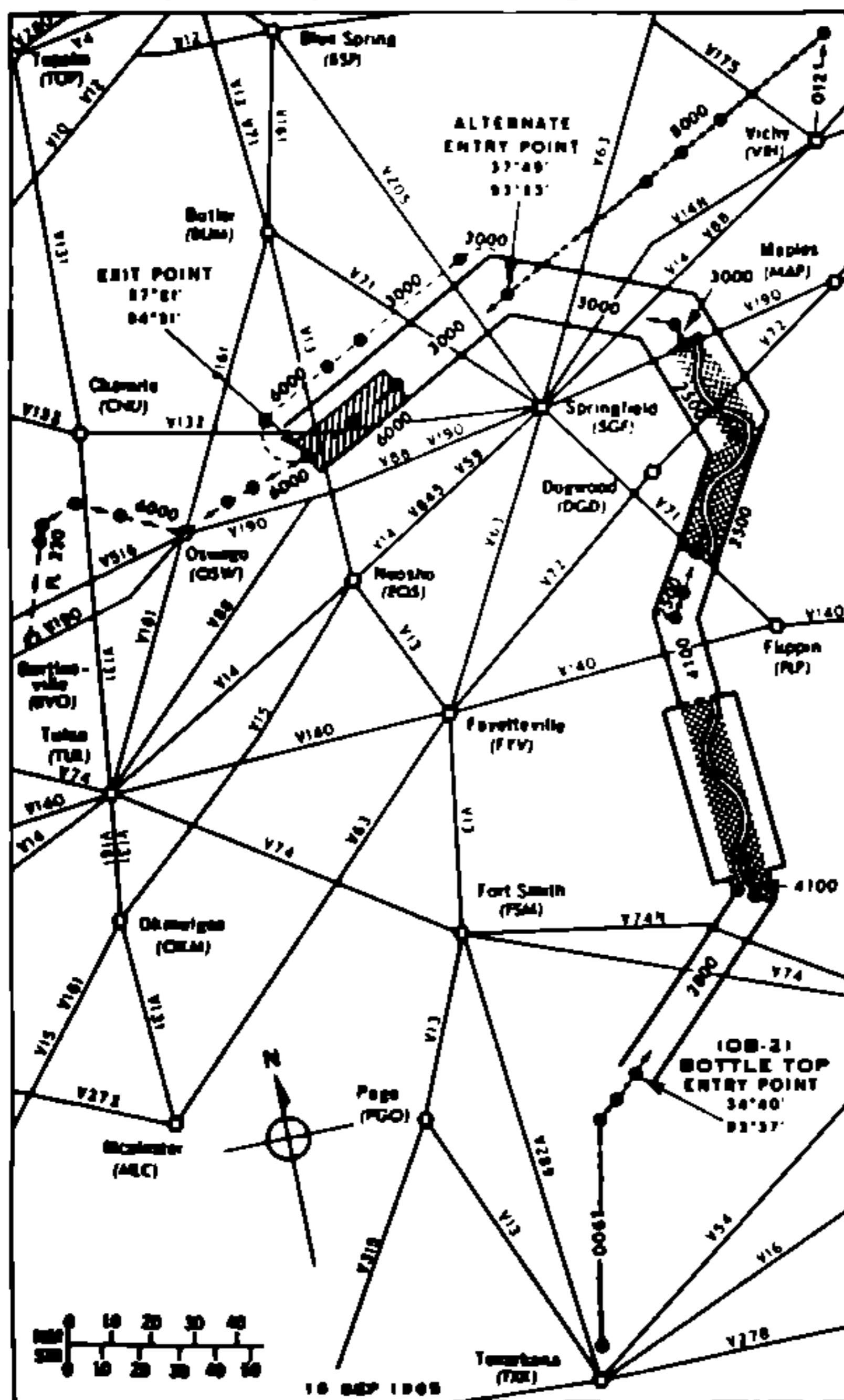
Effective Revised June 22, thru September 25, 1965

Aircraft shall cross the Sioux Falls VORTAC 260/55 (49°48'N, 98°02'W) at FL 230 or as assigned by ARTC; then descend direct so as to cross 43°02'N, 99°06'W at 8,000' MSL; then at 8,000' MSL direct to 42°54'N, 99°17'W; then descend direct so as to cross 42°35'N, 99°31'W at 4,000' MSL (Low Level Entry Point); then at 4,000' MSL direct to 40°41'N, 99°38'W; then at 4,000' MSL direct to 40°00'N, 100°10'W; then at 4,200' MSL direct to 39°28'N, 100°36'W; then at 4,200' MSL direct to 39°13'N, 100°37'W; then at 4,100' MSL direct to the entry point of the bomb run corridor at 38°50'N, 100°40'W.

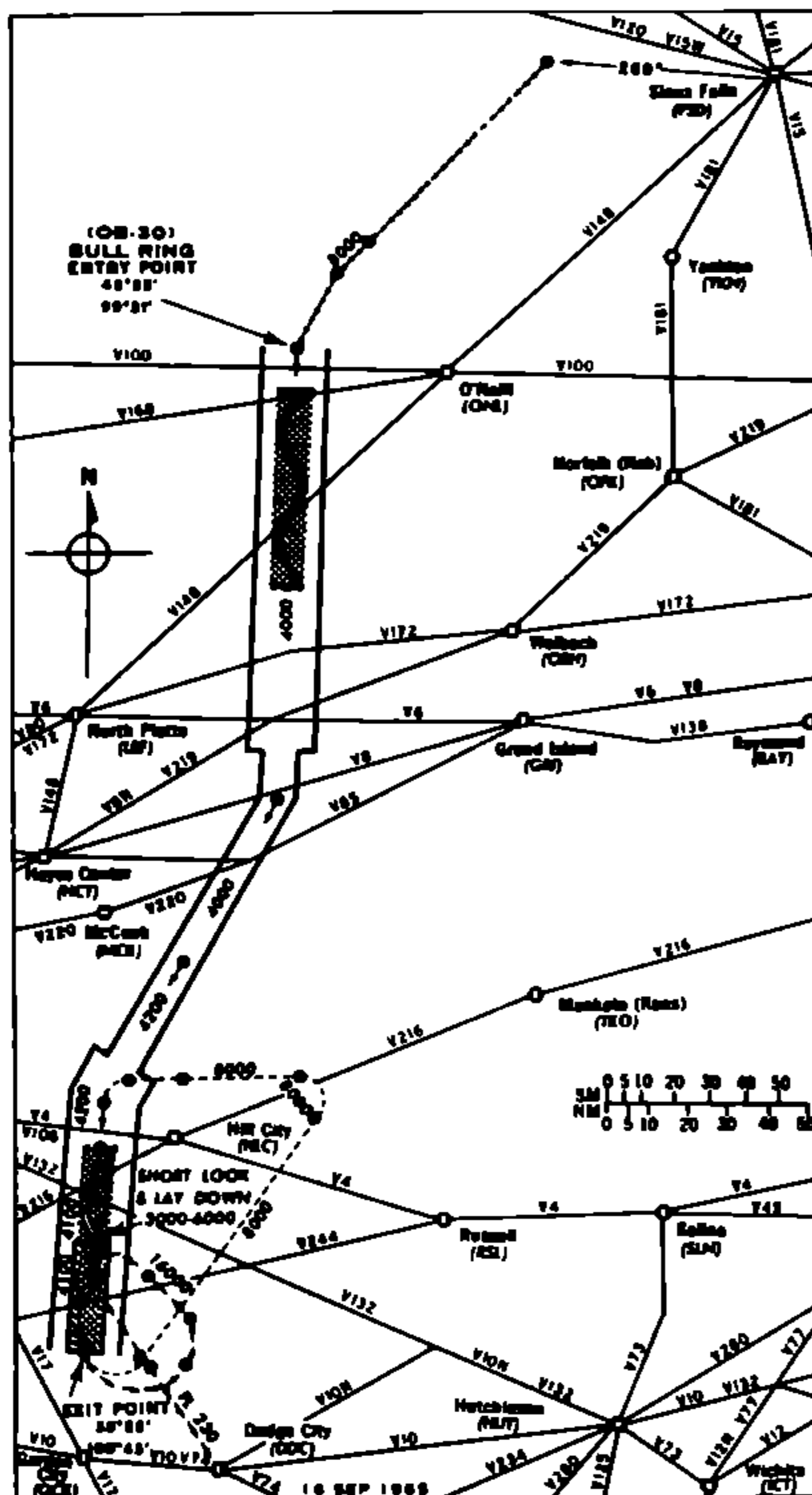
Short Look and Lay Down—After passing 38°50'N, 100°40'W aircraft shall maintain between 3,000' MSL and 6,000' MSL through the bomb run corridor (4 NM either side of centerline from 38°50'N, 100°40'W to 38°22'N, 100°43'W), the minimum IFR altitude through the bomb run corridor is 4,100' MSL. After exiting the route at 38°22'N, 100°43'W, aircraft shall turn left climbing to 38°18'N, 100°12'W; then continue climb direct so as to cross 38°30'N, 100°10'W at 16,000' MSL; then at 16,000' MSL direct 38°40'N, 100°23'W; then at 16,000' MSL turn left to 38°41'N, 100°41'W; then climb direct to the Dodge City, Kansas, VOR crossing 38°10'N, 100°24'W at FL 230; then at FL 230 to the Dodge City VOR.

Re-Entry—After completing the initial bomb run, aircraft that are scheduled to execute an additional bomb run shall after passing 38°23'N, 100°43'W, turn left and climb so as to cross 38°20'N, 100°26'W at 8,000' MSL; then at 8,000' MSL direct 39°21'N, 99°30'W; then at 8,000' MSL turn left to 39°31'N, 99°34'W then at 8,000' MSL direct 39°31'N, 100°12'W; then start descent direct so as to cross 39°31'N, 100°28' at 4,200' MSL; then turn left at 4,200' MSL to 39°26'N, 100°36'W; thence via the published route.

VFR and Ceilure—If the encountered weather conditions along the route are equal to or better than ceiling 3,000'; visibility 5 miles, the pilot may descend VFR and operate between the IFR altitudes indicated on the chart and 500' above the immediate terrain: From 42°25'N, 99°32'W to 41°35'N, 99°35'W and from 39°13'N, 100°37'W to 38°23'N, 100°43'W. VFR operations conducted during the hours of darkness will not be flown lower than 800' above the terrain.



VFR and Ceilings—If the encountered weather conditions along the route are equal to or better than ceiling 3000', visibility 5 miles, the pilot may descend VFR and operate



Route Width—The route width is reduced to 4 NM on each side of centerline from 40°53'N, 98°38'W to 39°35'N, 100°30'W.

Hours of Operation—24 hours daily, 7 days a week.

KANSAS/MISSOURI/NEBRASKA

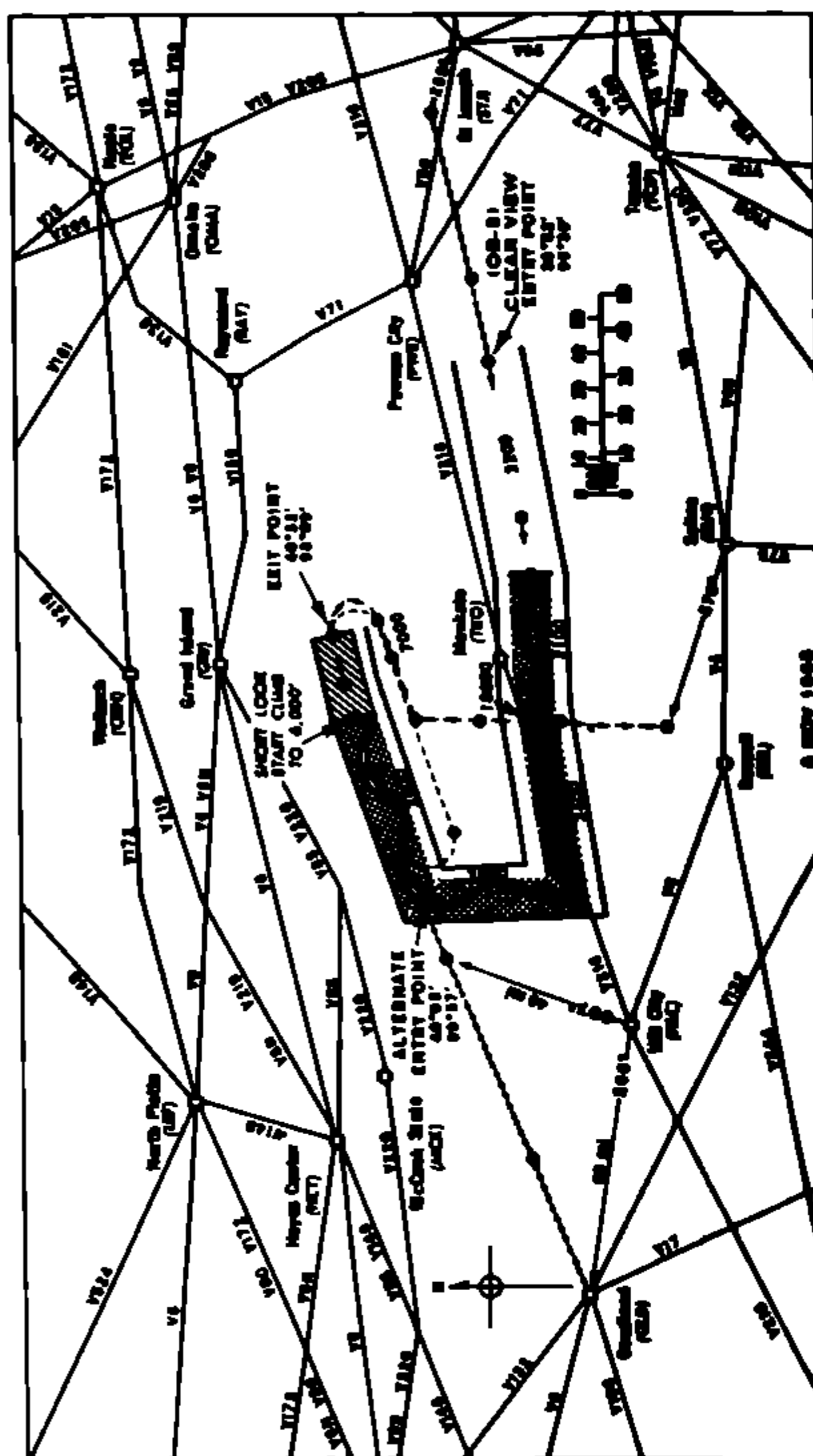
• CLEAR VIEW OB-3

Revised Effective November 8, 1965

Aircraft shall cross the St. Joseph, Mo. VOR at FL 240 or above, then proceed northwest on the St. Joseph VOR 285° radial, maintain FL 240 or as assigned until 20 NM northwest of St. Joseph VORTAC; turn left direct 39°58'N, 98°12'W crossing this point at 6000' MSL, descend to 3200' MSL direct to the route entry point at 39°52'N, 98°39'W, maintain 3200' MSL direct 30°43'N, 97°30'W, descend to 3100' MSL direct 39°40'N, 98°30'W, climb to 3400' MSL direct 39°31'N, 98°34'W, climb to 3800' MSL direct 40°08'N, 98°37'W maintain 3800' MSL direct 40°20'N, 98°37'W.

Short Look—After passing 40°26'N, 98°37'W, proceed direct to 40°29'N, 98°27'W climbing so as to cross this

point at 6000' MSL; maintain 6000' MSL through the bomb run corridor (4 NM either side centerline from 40°26'N, 98°37'W to 40°32'N, 98°09'W); after exiting the route at 40°32'N, 98°09'W, turn right climbing to cross 40°20'N, 98°03'W at 7000' MSL; then at 7000' MSL direct 40°16'N, 98°16'W; then start climb so as to cross 40°10'N, 98°37'W at or below 14,000' MSL; then turn left climbing so as to cross 39°54'N, 98°37'W at FL 180; then at FL 180 direct 39°52'N, 98°37'W; then climb so as to cross 39°08'N, 98°37'W at FL 240 (Salina VORTAC 278/49).



Re-Entry—After completing the initial Short Look bomb run, aircraft that are scheduled to execute an additional bomb run shall, after exiting the route at 40°32'N, 98°09'W, turn right climbing to 7000' MSL to 40°20'N, 98°03'W, maintain 7000' MSL direct 40°00'N, 98°14'W; turn right descending to 3800' MSL to 40°12'N, 98°22'W, thence via the published route.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3000',

visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 500' above the immediate terrain between the following points: from 39°42'N, 97°48'W to 40°26'N, 98°37'W. VFR operations conducted during the hours of darkness will not be flown lower than 800' above the terrain.

Alternate Entry—Aircraft shall cross the Hill City, Kansas, VORTAC 266/69 NM fix at FL 240 or as assigned by ARTCC; then maintain FL 240 or assigned altitude direct 39°38'N, 101°00'W; then descend so as to cross the Hill City, Kansas VORTAC 007/49 NM fix at 5500' MSL; then descend to 3800' MSL direct 40°08'N, 96°37'W; thence via the published route.

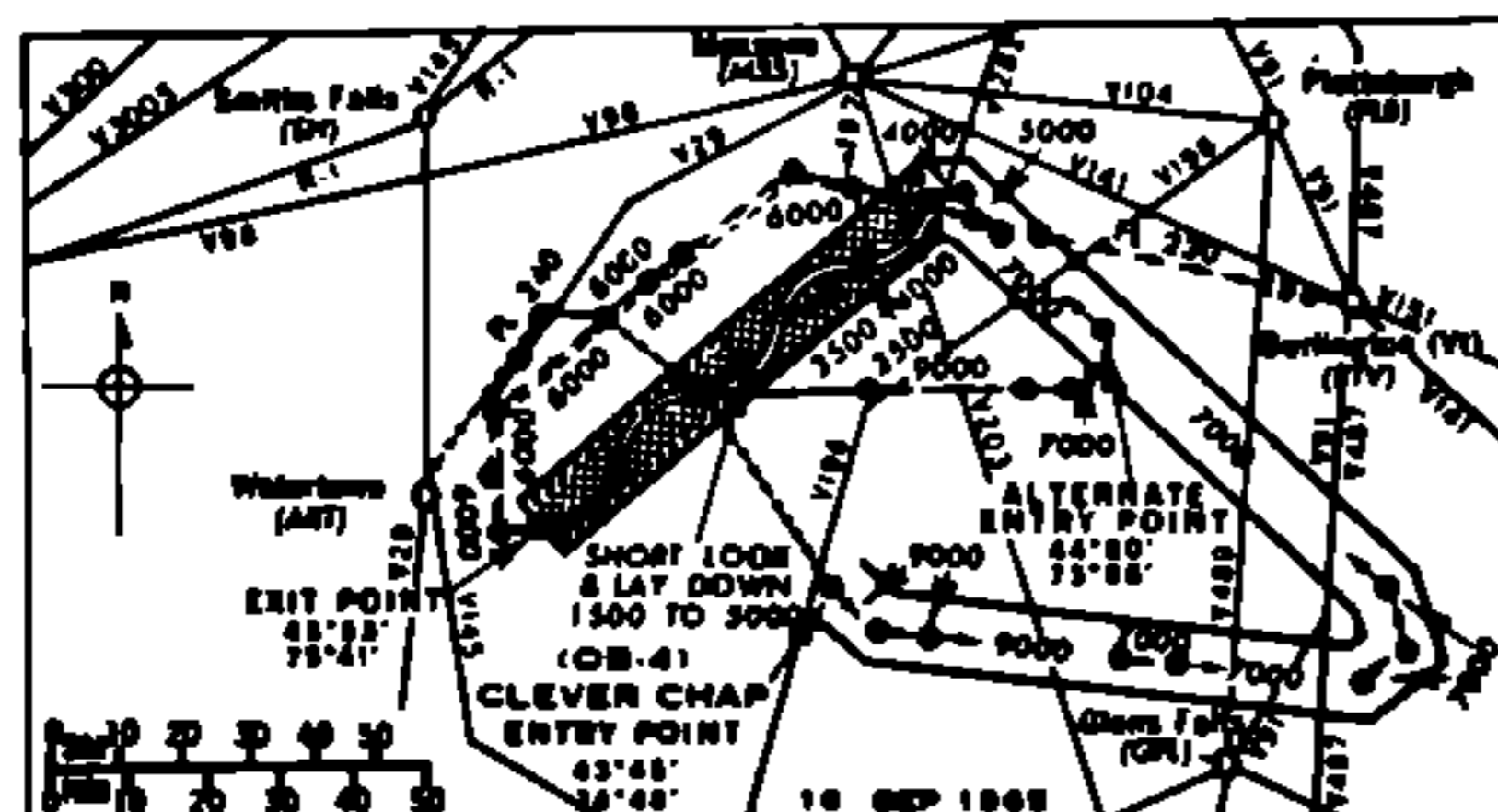
Route Width—The route width from 39°31'N, 99°34'W to the route exit point is 4 NM on the west and north side of the route centerline and 9 NM on the east and south side of the route centerline.

Hours of Operation—0000Z to 2359Z Monday through Saturday.

NEW YORK/VERMONT CLEVER CHAP OB-4

Revised Effective May 25, 1965

Aircraft shall cross 43°57'N, 76°04'W (Watertown, N.Y. VOR) at FL 250 or as assigned by ARTCC; descend, cross 44°16'N, 75°47'W at FL 230; continue descent direct 44°22'N, 75°42'W; cross 44°22'N, 75°30'W at FL 180; cross 44°13'N, 75°12'W at 14,000' MSL; cross low level entry point 43°45'N, 74°48'W at 9000' MSL; maintain 9000' direct 43°39'N, 74°39'W direct 43°38'N, 74°30'W direct 43°35'N, 73°55'W descend to cross 43°34'N, 73°46'W at 7000' MSL maintain 7000' direct 43°31'N, 73°10'W left turn to 43°36'N, 73°01'W to 43°43'N, 73°05'W direct 44°33'N, 74°16'W descend to cross 44°37'N, 74°24'W at 5000' cross 44°37'N, 74°30'W at 4000' maintain 4000' to 44°28'N, 74°44'W descend to cross 44°26'N, 74°47'W at 3500' MSL; direct at 3500' MSL to enter bomb run corridor at 44°15'N, 75°05'W.



Short Look and Lay Down—After passing 44°15'N, 75°05'W aircraft shall operate through bomb run corridor between 1500' MSL and 5000' MSL. Minimum IFR altitude through the bomb run corridor is 3500' MSL (the bomb run corridor is 4 NM either side of centerline from 44°15'N, 75°05'W to 43°53'N, 75°41'W). After exiting the low level route at 43°53'N, 75°41'W aircraft shall turn right and climb so as to cross 43°52'N, 75°48'W at 6000' MSL. Maintain 6000' MSL direct 44°00'N, 75°51'W; direct 44°10'N, 75°51'W, direct 44°27'N, 75°22'W; climb cross 44°30'N, 75°17'W at 13,000' MSL or below; cross 44°41'N,

74°58'W at 14,000' (Burlington, Vt. VOR 298 radial) cross 44°39'N, 74°45'W at 16,000' (Massena, N.Y. VOR 187 radial); cross 44°35'30''N, 74°21'W at FL 200; climb to cross 44°33'30''N, 74°09'W at FL 230, maintain FL 230 direct 44°24'N, 73°11'W (Burlington, Vt. VOR).

Re-Entry—After completing the bomb run, aircraft scheduled for an additional bomb run shall, after exiting the route at 43°53'N, 75°41'W; turn right and climb so as to cross 43°52'N, 75°48'W at 6000' MSL; maintain 6000' direct 44°00'N, 75°51'W; direct 44°10'N, 75°51'W; right turn to 44°22'N, 75°30'W; direct 44°39'N, 74°58'W; right turn descend to cross 44°39'N, 74°45'W at 4000'; maintain 4000', continue turn to intercept Clever Chap route at 44°28'N, 74°44'W.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3000', visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 800' above the immediate terrain between the following points: from 44°37'N, 74°30'W to 43°53'N, 75°41'W. VFR operations will not be conducted during the hours of darkness.

Alternate Entry—Aircraft shall cross 43°57'N, 76°04'W (Watertown, N.Y. VOR) at FL 250 or as assigned by ARTCC; descend, cross 44°16'N, 75°47'W at FL 230; continue descent direct 44°22'N, 75°42'W; cross 44°22'N, 75°30'W at FL 180. Cross 44°13'N, 75°12'W at 14,000' MSL; continue descent to cross 44°13'N, 74°41'W at 9000' MSL; maintain 9000' direct 44°13'N, 74°12'W; start descent, cross 44°13'N, 74°04'W at 7000' MSL; maintain 7000' MSL direct 44°20'N, 73°58'W, thence via the Clever Chap route.

Route Width—The entire low level route is reduced to 4 NM either side of centerline.

Hours of Operation—0000Z to 2359Z Monday through Sunday.

ALABAMA/MISSISSIPPI • COIL SPRING OB-5

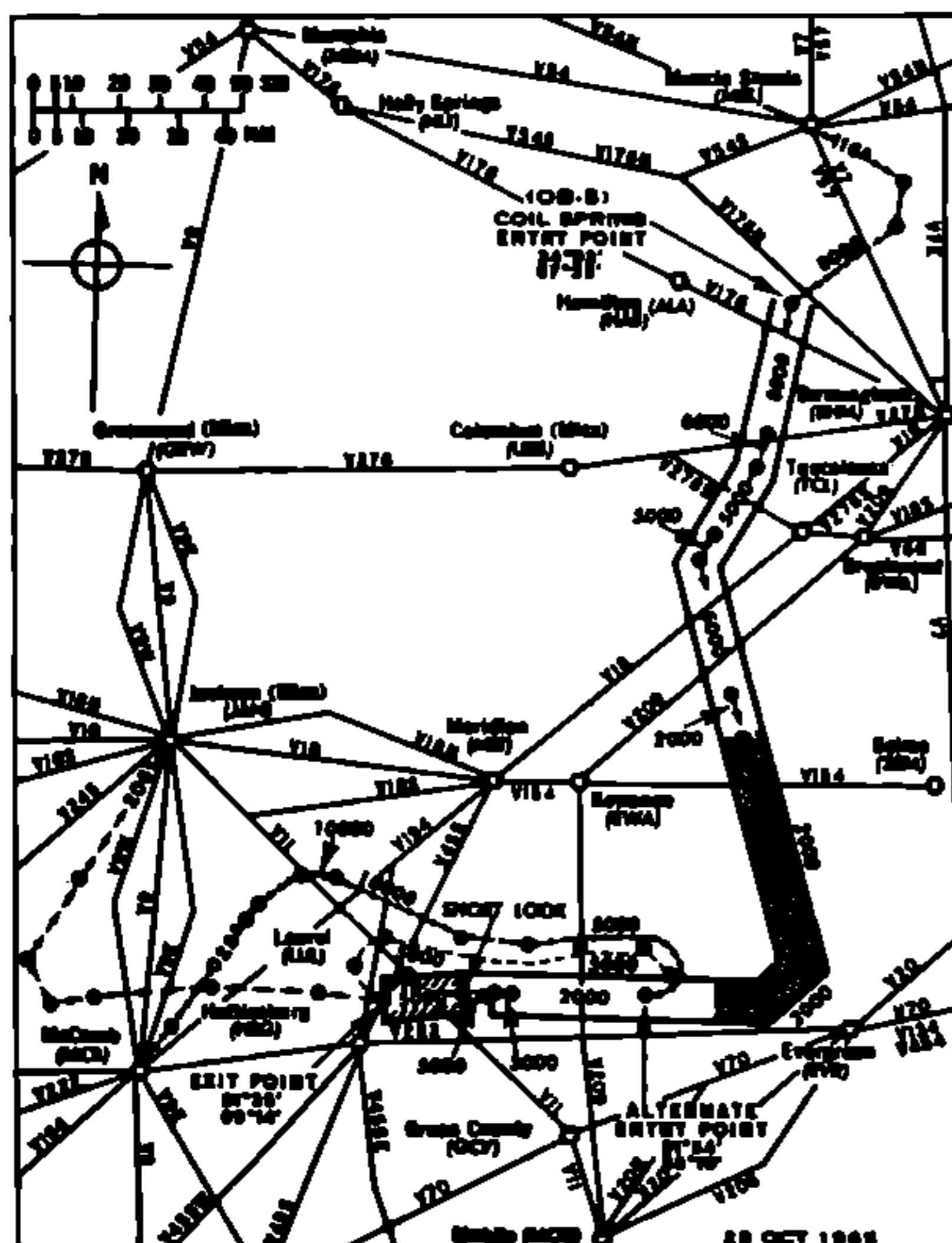
Revised Effective October 28, 1965

Aircraft shall cross Muscle Shoals, Alabama VOR at FL 200, or as assigned. Descend via Muscle Shoals VOR 116° radial, cross Muscle Shoals VOR 116°/24 NM at 12,000' MSL; turn right, descend to cross 31°19'N, 87°08'W at 8000' MSL, maintain 8000' MSL direct to the route entry point at 31°03'N, 87°33'W, direct 33°35'N, 87°38'W, direct 33°28'N, 87°42'W; descend direct to cross 33°15'N, 87°52'W at 5000' MSL, maintain 5000' MSL direct 33°10'N, 87°56'W, direct 32°40'N, 87°48'W; descend to cross 32°31'N, 87°45'W at 2000' MSL, maintain 2000' MSL direct 31°41'N, 87°31'W, turn right to 31°33'N, 87°40'W, maintain 2000' MSL direct 31°36'N, 88°42'W; climb direct to cross 31°36'N, 88°46'W at 3000' MSL, direct to cross 31°36'N, 88°54'30''W at 5000' MSL. In addition to the above, aircraft may climb to 3000' MSL after 31°33'N, 87°40'W and maintain 3000' MSL to 31°36'N, 88°54'30'' during the hours 0600Z-1200Z.

Short Look—After passing 31°36'N, 88°54'30''W aircraft shall operate through the bomb run corridor at 5000' MSL. In addition, aircraft may operate through the bomb run corridor at 3000' MSL during the hours 0600Z-1200Z. (The bomb run corridor is 4 NM either side centerline from 31°36'N, 88°54'30''W to 31°35'N, 89°14'W.) After exiting the route at 31°35'N, 89°14'W, aircraft shall cross 31°36'N, 89°30'W at 5000' MSL; start climb direct to cross 31°37'N, 89°56'W at 14,000' MSL (reporting point), maintain 14,000' MSL direct 31°33'N, 90°25'W; start climb direct 31°32'N, 90°36'W, turn right to intercept Jackson, Miss. VORTAC 206° radial 56 NM fix (31°42'N, 90°44'W) at FL 200; maintain FL 200 via 206 radial to the 41 NM fix (31°55'N, 90°35'W); climb to cross the 16 NM fix at FL 250; maintain FL 250 (or flight level assigned) to Jackson VORTAC.

Re-Entry—Aircraft scheduled to execute an additional bomb run shall, after exiting the route at 31°35'N, 89°14'W, turn right, cross 31°42'N, 89°22'W at 5000' MSL, maintain 5000' MSL, turn right to 31°49'N, 89°14'W, direct 31°49'N, 89°27'W; direct 31°48'N, 89°10'W; turn right, cross 31°40'N, 89°03'W at 3000' MSL; continue turn, cross 31°34'N, 88°10'W at 2000' MSL; thence via published route.

VFR and Ceilings—If the encountered weather conditions along the route are equal to or better than ceiling 3000', visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 500' above the immediate terrain between the following points: From 32°31'N, 87°45'W to 31°33'N, 87°52'W. VFR operations conducted during the hours of darkness will not be flown lower than 800' above the terrain.



Alternate Entry—Aircraft shall cross McComb, Miss. VOR (31°18'15"N, 90°15'29"W) at FL 230, or as assigned; maintain FL 230 or as assigned via the McComb VOR 028° radial to 15 NM fix; start descent, cross McComb VOR 028° radial 41 NM fix at 15,000' MSL; cross 45 NM fix at 14,000' MSL; turn right, cross 32°01'N, 89°35'W at 10,000' MSL, maintain 10,000' MSL, turn right, 32°01'N, 89°27'W, direct 31°49'N, 88°55'W; descend direct, cross 31°48'N, 88°39'W at 6000' MSL; direct, cross 31°48'N, 88°27'W at 5000' MSL, maintain 5000' MSL direct 31°48'N, 88°10'W; turn right cross 31°40'N, 88°03'W at 3000' MSL continue turn, cross 31°34'N, 88°10'W at 2000' MSL; thence via the published route.

Route Width—The entire route is reduced to 4 NM either side of route centerline except on the south side from 31°36'N, 88°46'W to 31°36'N, 88°54'30"W which is reduced to 2 NM.

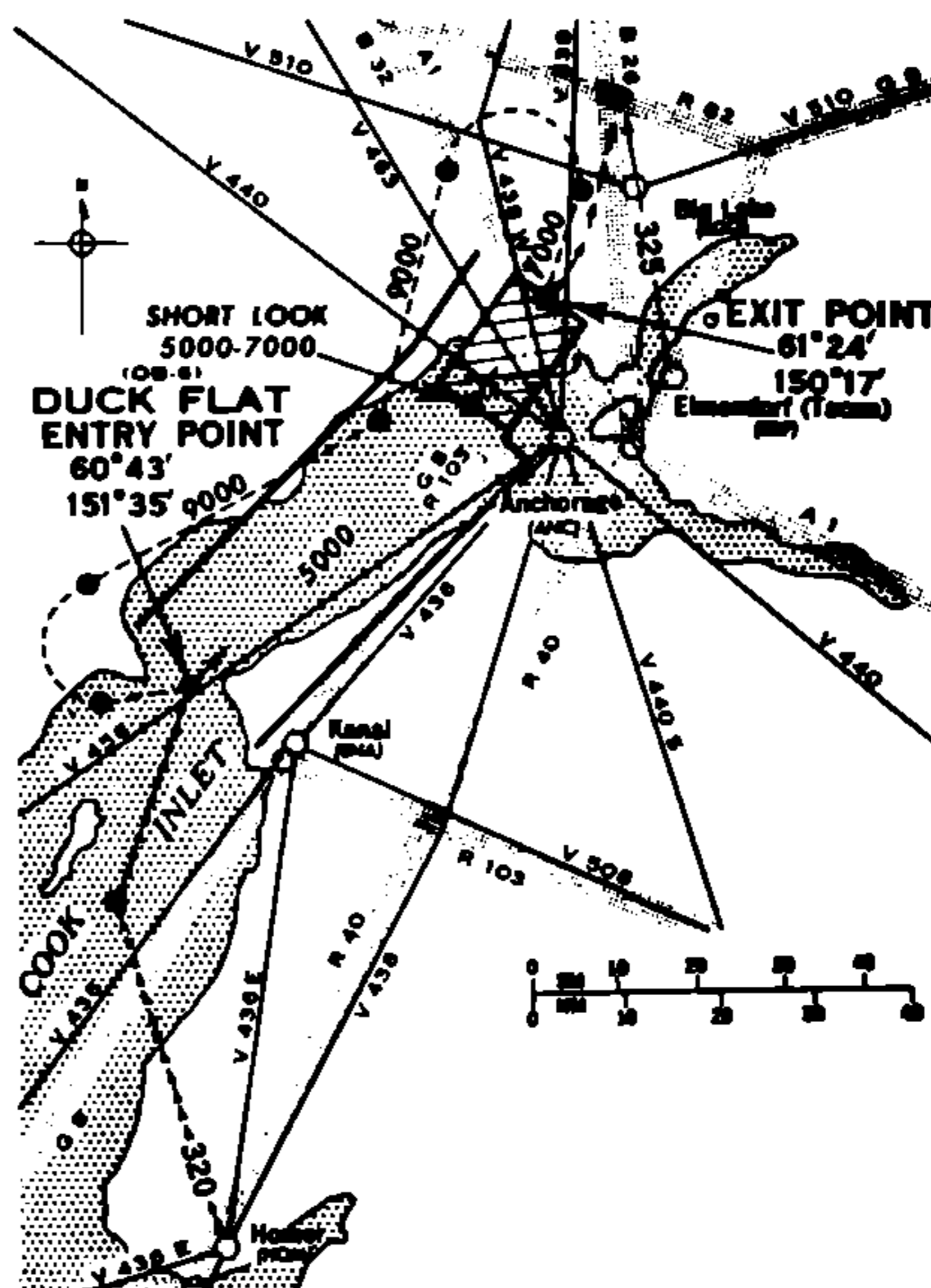
Hours of Operation—24 hours per day, 7 days a week.

ALASKA

DUCK FLAT OB-6

Effective June 16, 1963

Aircraft shall cross the Homer, Alaska VOR (reporting point) at FL 250 or as assigned by ARTCC, descend via the 320° radial of the Homer VOR to 60°20'N, 151°50'W, continue descent to cross the route entry point at 60°43'N, 151°35'W at 5000' MSL, maintain 5000' MSL to 61°13', 150°34'W.



Short Look—After passing 61°13'N, 150°34'W aircraft shall maintain between 5000' MSL and 7000' MSL through the bomb run corridor (4 NM either side centerline from 61°13'N, 150°34'W to 61°24'N, 150°17'W). After passing 61°24'N, 150°17'W (reporting point), the route exit point, aircraft shall climb to or maintain 7000' MSL direct to the Elmendorf TACAN 825° radial 80 NM fix (Willow Intersection).

Re-Entry—After completing the initial bomb run aircraft that are scheduled to execute an additional bomb run shall, after exiting the route at 61°24'N, 150°17'W, maintain 7000' MSL to 61°35'N, 150°08'W, then turn left climbing to 8000' MSL direct to 61°38'N, 150°38'W, then 9000' MSL to 61°13'N, 150°34'W, then 9000' MSL direct 60°53'N, 151°57'W, then a left descending turn to cross 60°41'N, 151°54'W at 7000' MSL or above, direct to re-entry the Duck Flat route at 60°43'N, 151°35'W at 5000' MSL.

Route Width—The route width is reduced to 4 NM southeast of centerline from 61°13'N, 150°34'W to 61°24'N, 150°17'W.

Hours of Operation—2000Z to 2400Z Monday through Friday.

ARKANSAS/MISSOURI FIRE SALE OB-31

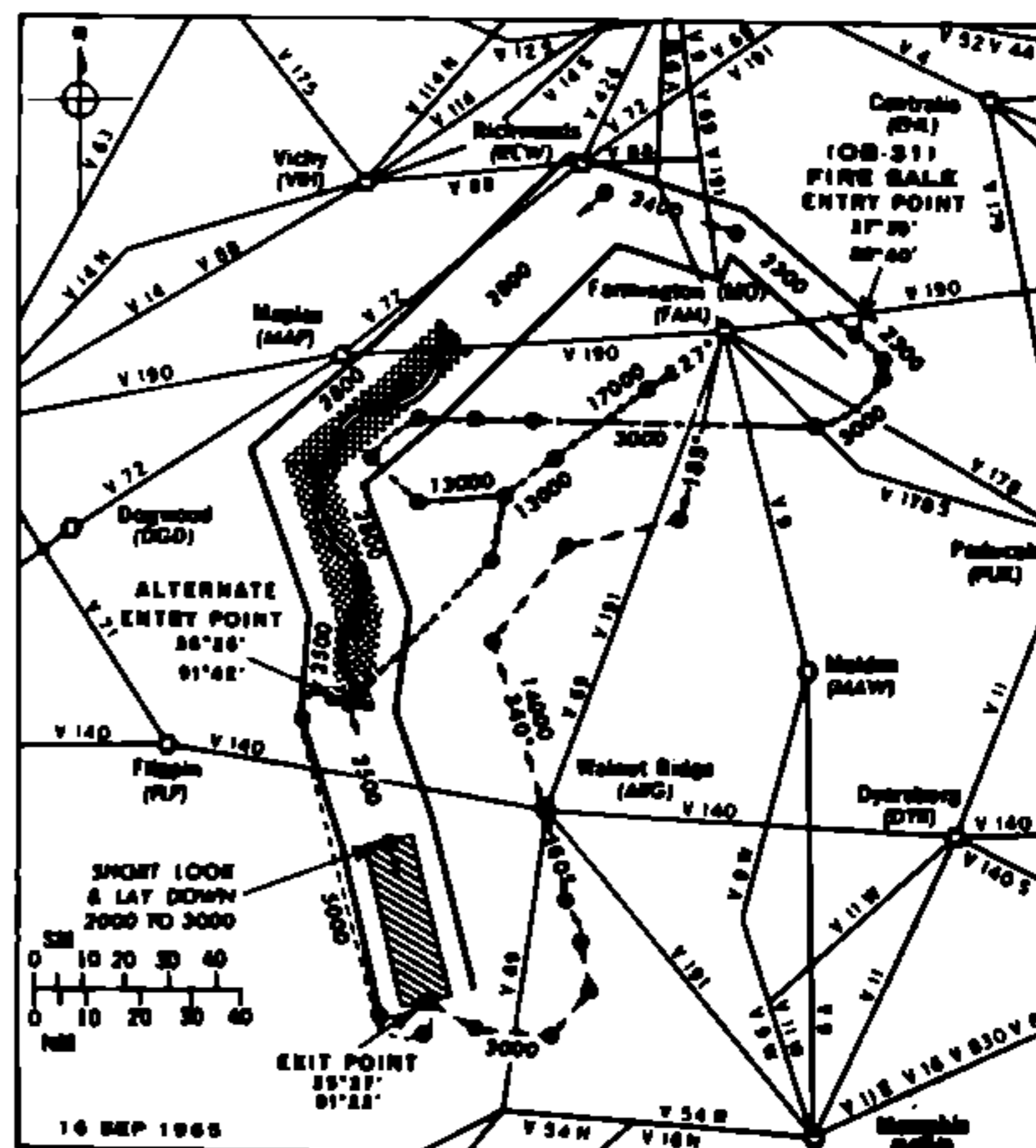
Effective May 27 thru September 25, 1965

Aircraft shall cross the Farmington, Missouri, VORTAC (37°40'24"N, 90°14'02"W) at FL 240, or as assigned by ARTC; then at FL 240, or assigned altitude, proceed via the 227° radial of the Farmington VORTAC direct to 37°29'N, 90°33'W (227/18 NM DME FIX); then descend direct so as to cross 37°16'N, 90°54'W at 17,000' MSL; then descend direct so as to cross 37°08'N, 91°07'W at 13,000' MSL; then at 13,000' MSL turn right to 37°07'N, 91°29'W; then turn right descending to 37°15'N, 91°38'W; then continue turn descending to 37°23'N, 91°28'W; then descend direct so as to cross 37°23'N, 91°13'W at 8000' MSL; then descend direct so as to cross 37°28'N, 91°00'W at 3000' MSL, then at 3000' MSL direct to 37°22'N, 89°50'W; then at 3000' MSL turn left to 37°32'N, 89°34'W; then descend direct so as to cross 37°35'N, 89°34'W at 2300' MSL; then at 2300' MSL direct to the route entry point at 37°39'N, 89°40'W; then at 2300' MSL direct to 38°00'N, 90°10'W; then at 2400' MSL direct to 38°08'N, 90°43'W; then at 2800' MSL direct to 37°30'N, 91°30'W; then at 2800' MSL direct to 37°13'N, 91°54'W; then at 2800' MSL direct to 36°45'N, 91°39'W; then at 2500' MSL direct to 36°26'N, 91°42'W; then at 2500' MSL direct to 36°00'N, 91°38'W.

Short Look and Lay Down—After passing 36°00'N, 91°33'W, aircraft shall maintain between 2000' MSL and 3000' MSL through the bomb run corridor (4 NM either side of centerline from 36°00'N, 91°33'W to 35°27'N, 91°22'W). After exiting the route at 35°27'N, 91°22'W, aircraft shall turn left and climb so as to cross or maintain 3000' MSL to 35°23'N, 91°12'W; then at 3000' MSL to 35°22'N, 90°54'W; then start climb so as to intercept the 160° radial of the Walnut Ridge VOR (35°30'N, 90°45'W) at 7000' MSL; then climb via the inbound 160° radial of the Walnut Ridge VOR so as to cross the 28 NM fix (35°40'N, 90°48'W) at 11,000' MSL or above; then via the 160° radial climb so as to cross the 19 NM fix (35°48'N, 90°51'W) at 14,000' MSL; then at 14,000' MSL via the 160° radial inbound and the 840° radial outbound direct to the 33 NM fix (36°39'N, 91°08'W); then start climb so as to cross 36°58'N, 90°51'W at FL 200; then climb so as to cross 37°04'N, 90°23'W (FAM 185/37) at FL 250.

Re-Entry—After completing the initial bomb run, aircraft that are scheduled to execute an additional bomb run, shall after passing 35°27'N, 91°22'W, turn right and climb so as to cross or maintain 3000' MSL to 35°21'N, 91°24'W; continue turn and climb so as to cross 35°24'N, 91°34'W at 5000' MSL; then at 5000' MSL direct 36°24'N, 91°54'W; then turn right descending so as to cross 36°26'N, 91°42'W at 2500' MSL; thence via the published route.

VFR and Cease—If the encountered weather conditions along the route are equal to or better than ceiling 3,000; visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 500' above the immediate terrain between the following points: From 37°40'N, 91°18'W to 36°26'N, 91°42'W. VFR operations conducted during the hours of darkness will not be flown lower than 800' above the terrain.



Alternate Entry—Aircraft shall cross the Farmington, Missouri, VORTAC at FL 240, or as assigned by ARTC; maintain FL 240, or assigned altitude, via the Farmington VORTAC 227° radial to the 18 NM DME fix (37°29'N, 90°33'W); then descend direct so as to cross 37°16'N, 90°54'W at 17,000' MSL; then descend direct so as to cross 37°08'N, 91°07'W at 13,000' MSL; then at 13,000' MSL turn left to 36°55'N, 91°08'W; then right turn descending so as to cross 36°26'N, 91°42'W at 2500' MSL; thence via the published route.

Route Width—The route width is reduced to 4 NM on both sides of the centerline from 37°39'N, 89°40'W to 38°00'N, 90°10'W, and on the north side of centerline from 38°00'N, 90°10'W, to 38°08'N, 90°43'W.

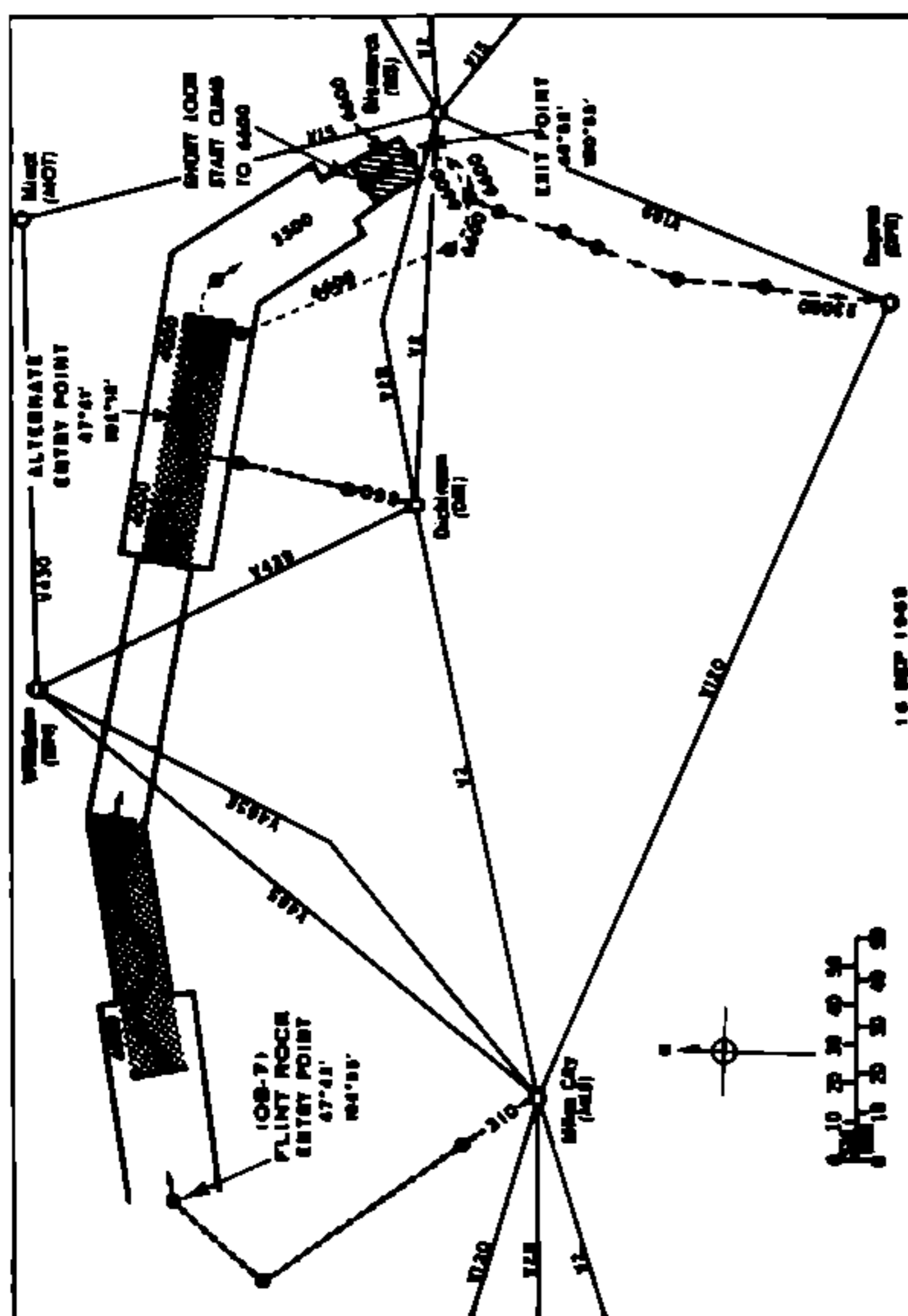
Hours of Operation—24 hours daily, 7 days per week.

MONTANA/NORTH DAKOTA FLINT ROCK OB-7

Revised Effective July 22, 1965

Aircraft shall cross the Miles City, Montana VORTAC (reporting point) at FL 230, or as assigned by ARTCC, and proceed via the 310° radial, maintaining FL 230 or as assigned, to 46°40'N, 106°14'W; then descend to cross 47°24'N, 107°00'W at or above 6000' MSL; then continue descent so as to cross the route entry point, 47°43'N, 106°35'W, at 4000' MSL; then at 4000' MSL direct 47°57'N, 104°30'W; then at 4000' MSL direct 47°35'N, 101°31'W; then descend to 3500' MSL direct 47°02'N, 101°02'W.

Short Look—After passing 47°02'N, 101°02'W aircraft shall climb so as to cross 46°56'N, 100°56'W at 6800' MSL; then at 6800' MSL direct to the exit point 46°52'N, 100°53'W (bomb run corridor 4 NM either side of centerline from 47°02'N, 101°02'W to the exit point 46°52'N, 100°53'W); then maintaining 6800' MSL turn right



direct $46^{\circ}39'N$, $101^{\circ}07'W$; then start climb to FL 230 direct to $45^{\circ}53'N$, $101^{\circ}35'W$; direct to Dupree VORTAC, climbing so as to cross $46^{\circ}30'N$, $101^{\circ}12'30''W$ at or above 8,000' MSL; crossing $46^{\circ}19'N$, $101^{\circ}19'W$ at or above 11,000' MSL; crossing $46^{\circ}18'N$, $101^{\circ}23'W$ at or below FL 190; crossing $45^{\circ}53'N$, $101^{\circ}35'W$ at FL 210, and to reach FL 230 at a point 30 nautical miles northeast of the Dupree VORTAC.

Re-Entry—After completing the initial bomb run aircraft that are scheduled to execute an additional Short Look bomb run shall, after passing $46^{\circ}52'N$, $100^{\circ}59'W$ maintain 6600' MSL direct $46^{\circ}39'N$, $101^{\circ}07'W$; then at 6600' MSL make a right turn direct to $46^{\circ}43'N$, $101^{\circ}24'W$; then at 6600' MSL direct $47^{\circ}30'N$, $101^{\circ}49'W$; then a right descending turn so as to reenter the route at $47^{\circ}35'N$, $101^{\circ}31'W$ at 8500' MSL, thence via the published route.

VFR and Ceilure—If the encountered weather conditions along the route are equal to or better than ceiling 3000', visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 800' above the immediate terrain between the following points: from $47^{\circ}49'N$, $105^{\circ}53'W$ to $47^{\circ}57'N$, $104^{\circ}30'W$ and from $47^{\circ}47'N$, $106^{\circ}03'W$ to $47^{\circ}37'N$, $101^{\circ}45'W$. VFR operations will not be conducted during the hours of darkness.

Alternate Entry—Aircraft shall cross the Dickinson, No. Dakota VORTAC (reporting point) at 15,000' MSL, or as assigned by ARTOC; then proceed via the 360° radial of Dickinson VORTAC at 15,000' MSL, or assigned flight level/ altitude, direct to a point 15 NM north of the Dickinson VORTAC (DIK 360/15); then descend direct

so as to cross $47^{\circ}51'N$, $102^{\circ}52'W$ at 8,000' MSL; then descend direct so as to cross $47^{\circ}42'30''N$, $102^{\circ}27'W$ at 6,000' MSL; then a descending right turn so as to cross $47^{\circ}41'N$, $102^{\circ}18'W$ at 4,000' MSL, thence via the published route.

Route Width—The route width is reduced to 4 NM on either side of centerline from $47^{\circ}50'N$, $105^{\circ}50'W$ to $47^{\circ}47'N$, $103^{\circ}03'W$ and from $47^{\circ}07'N$, $101^{\circ}06'W$ to $46^{\circ}52'N$, $100^{\circ}53'W$.

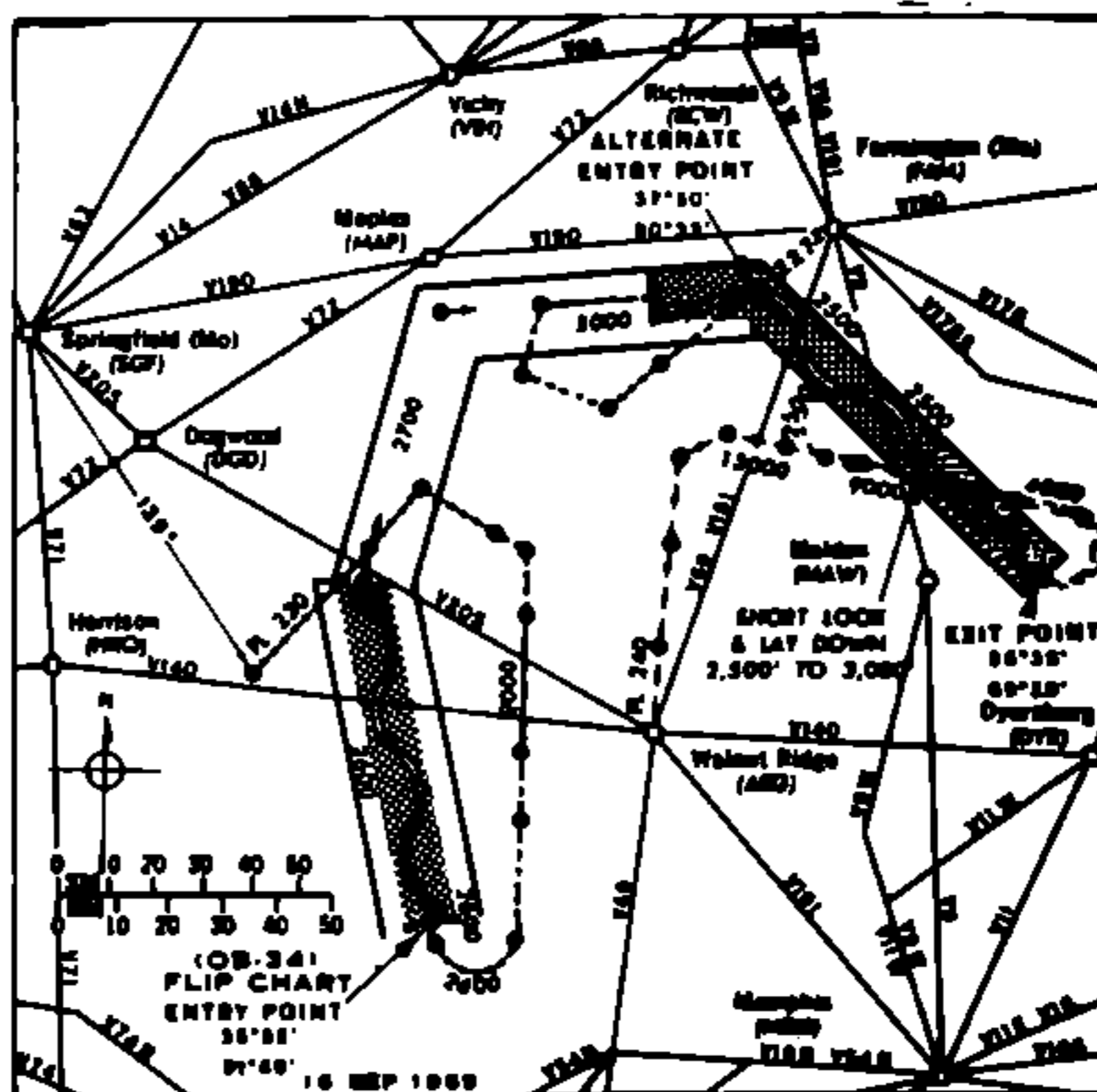
Hours of Operation—0000Z to 2400Z, 7 days weekly.

ARKANSAS/MISSOURI

FLIP CHART OB-34

Effective October 4, 1965 through March 26, 1966

Aircraft shall cross $36^{\circ}18'N$, $92^{\circ}27'W$ (Springfield, Missouri, VORTAC 139/75 NM DME FIX) at FL 230, or as assigned by ARTC; then at FL 230 direct to $36^{\circ}42'N$, $92^{\circ}01'W$; then descend direct so as to cross $36^{\circ}53'N$, $91^{\circ}49'W$ at FL 200; then descend direct so as to cross $36^{\circ}45'N$, $91^{\circ}32'W$ at 15,000' MSL; then descend direct to $36^{\circ}42'N$, $91^{\circ}25'W$; then continue descend direct so as to cross $36^{\circ}29'N$, $91^{\circ}25'W$ at 9,000' MSL; then at 9,000'



MSL direct to $36^{\circ}02'N$, $91^{\circ}27'W$; then descend direct so as to cross $35^{\circ}50'N$, $91^{\circ}27'W$ at 5000' MSL or below; then descend direct so as to cross $35^{\circ}28'N$, $91^{\circ}28'W$ at 2,600' MSL; then at 2,600' MSL turn right to $35^{\circ}27'N$, $91^{\circ}45'W$; then at 2,600' MSL direct to $35^{\circ}32'N$, $91^{\circ}46'W$ (Low Level Entry Point); then at 2,600' MSL direct to $36^{\circ}36'N$, $92^{\circ}02'W$; then at 2,700' MSL direct to $37^{\circ}28'N$, $91^{\circ}45'W$; then at 3,000' MSL direct to $37^{\circ}30'N$, $90^{\circ}33'W$; then descend direct so as to cross $37^{\circ}27'N$, $90^{\circ}30'W$ at 2,500' MSL; then at 2,500' MSL direct to $37^{\circ}10'N$, $90^{\circ}09'W$; then at 2,500' MSL direct to $36^{\circ}57'N$, $89^{\circ}54'W$.

Short Look and Lay Down—After passing $36^{\circ}57'N$, $89^{\circ}54'W$, aircraft shall operate between 2,500' MSL and 3,000' MSL through the bomb run corridor (4 NM either side of centerline from $36^{\circ}57'N$, $89^{\circ}54'W$ to $36^{\circ}35'N$, $89^{\circ}28'W$). After exiting the route at $36^{\circ}35'N$, $89^{\circ}28'W$, aircraft shall turn left and climb so as to cross $36^{\circ}49'N$, $89^{\circ}19'W$ at 4,000' MSL; then at 4,000' MSL direct to $36^{\circ}49'N$, $89^{\circ}34'W$; then climb direct so as to cross $36^{\circ}53'N$, $89^{\circ}52'W$ at 9,000' MSL; then at 9,000' MSL direct

to 36°57'N, 90°09'W; then climb direct so as to cross 37°00'N, 90°28'W at 13,000' MSL; then at 13,000' MSL direct to 37°03'N, 90°39'W; then turn left and climb to 36°58'N, 90°50'W; then continue climb direct so as to cross 36°43'N, 90°52'W at FL 180 or above; then climb direct so as to cross 36°23'N, 90°55'W at FL 240; then at FL 240 direct to the Walnut Ridge, Arkansas, VOR (36°08'30"N, 90°57'15"W).

Re-entry—After completing the initial bomb run, aircraft that are scheduled to execute an additional bomb run shall, after passing 36°35'N, 89°28'W, turn left and climb so as to cross 36°46'N, 89°19'W at 4,000' MSL; then at 4,000' MSL direct to 36°57'N, 90°11'W; then descend direct so as to cross 36°58'N, 90°17'W at 2,500' MSL; then at 2,500' MSL turn right to intercept the route at 37°10'N, 90°09'W; thence via the published route.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3,000', visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 500' above the immediate terrain between the following points: From 35°32'N, 91°46'W to 36°36'N, 92°02'W and from 37°20'N, 90°56'W to 36°35'N, 89°28'W. VFR operations conducted during the hours of darkness will not be flown lower than 800' above the terrain.

Alternate Entry—Aircraft shall cross the Farmington, Missouri, VORTAC at FL 240, or as assigned by ARTC; then at FL 240, or as assigned, proceed via the 227° radial of the Farmington VORTAC direct to the 227/18 NM DME fix; then descend direct so as to cross 37°18'N, 90°54'W at 17,000' MSL; then descend direct so as to cross 37°08'N, 91°07'W at 13,000' MSL; continue descend direct 37°14'N, 91°26'W; then turn right descending to 37°27'N, 91°22'W; then descend direct so as to cross 37°30'N, 90°33'W at 3,000' MSL; thence via the published route.

Route Width—The route width is reduced to 4 NM on the west side of centerline from 36°36'N, 92°02'W to 37°28'N, 91°45'W; on the north side of centerline from 37°28'N, 91°45'W to 37°30'N, 90°33'W and on both sides of centerline from 37°30'N, 90°33'W to 36°35'N, 89°28'W.

Hours of Operation—24 hours daily, 7 days per week.

FUNNY BOY OB-8

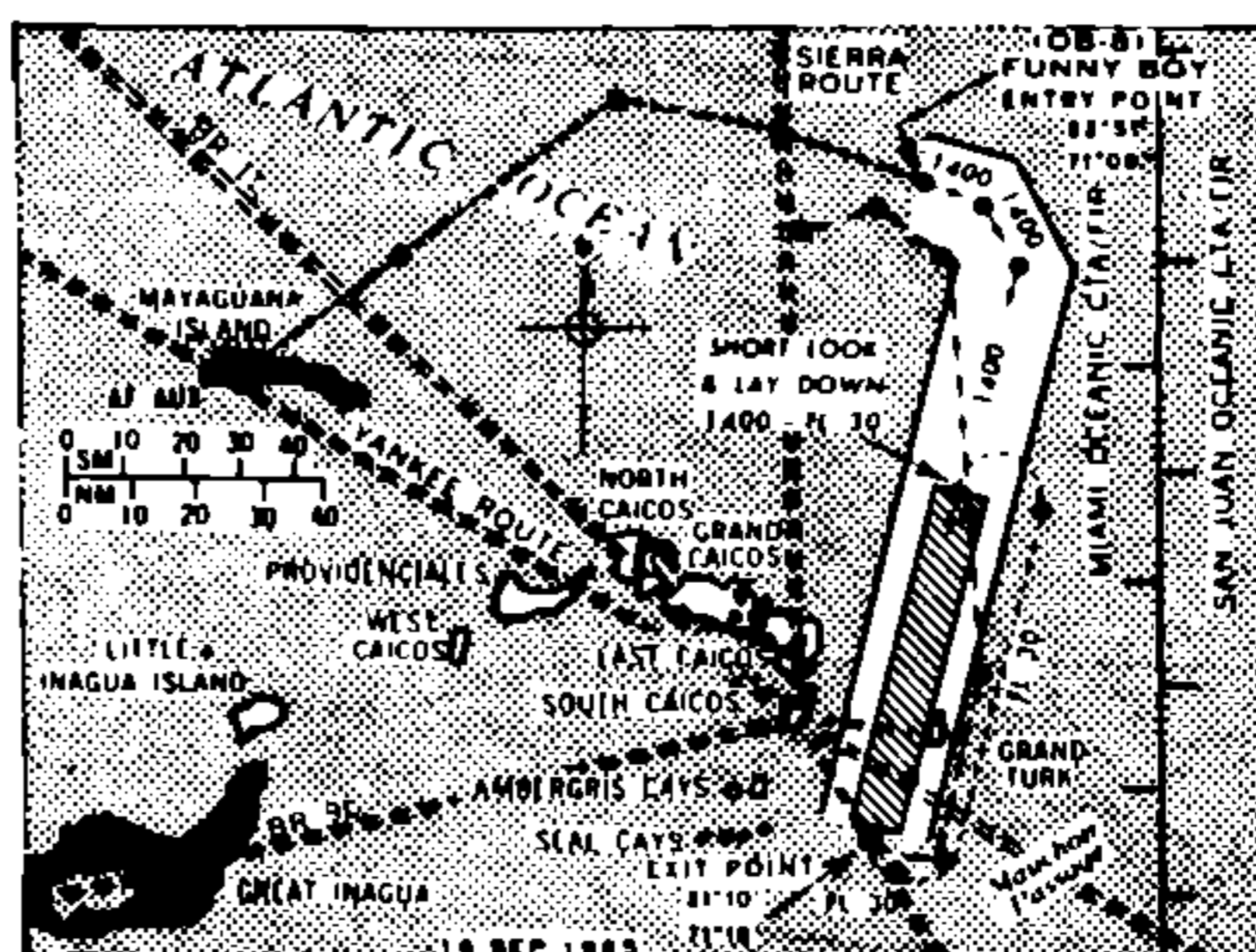
Revised Effective March 4, 1965

Aircraft shall cross 22°23'N, 78°02'W (Mayaguana AFB) at FL 270 or as assigned; maintain FL 270 or as assigned 22°41'N, 72°35'W (reporting point); start descent, cross 23°05'N, 72°00'W at FL 150; right turn, cross 23°00'N, 71°33'W at FL 90 or below; cross 22°51'N, 71°08'W at 1400' MSL (the route entry point); maintain 1400' MSL direct 22°48'N, 70°58'W; turn right to 22°39'N, 70°53'W; direct 22°04'N, 71°03'W.

Short Look and Lay Down—After passing 22°04'N, 71°03'W, aircraft shall maintain between 1400' and FL 90 through the bomb run corridor (4 NM either side of centerline from 22°04'N, 71°03'W to 21°10'N, 71°18'W). After exiting the route at 21°10'N, 71°18'W, aircraft shall turn left, cross 21°08'N, 71°14'W at FL 30; maintain FL 30 to 21°08'N, 71°08'W, direct 21°35'N, 71°00'W; start climb, cross 22°00'N, 71°02'W at FL 110 or above cross 22°40'N, 71°08'W at FL 250 or above; left turn to 22°48'N, 71°18'W; cross 22°45'N, 71°30'W at FL 290 or as assigned.

Re-Entry—After completing the initial bomb run, aircraft scheduled to execute an additional bomb run shall, after exiting the low level route at 21°10'N, 71°18'W, turn left cross 21°08'N, 71°14'W at FL 30; maintain FL 30 to 21°08'N, 71°08'W; direct 22°01'N, 70°53'W; turn left descend to cross 22°04'N, 71°03'W at 1400'; thence via the published route.

Hours of Operation—0000Z to 2359Z Monday through Saturday.



MICHIGAN/ONTARIO, CAN.

ICE AGE OB-9

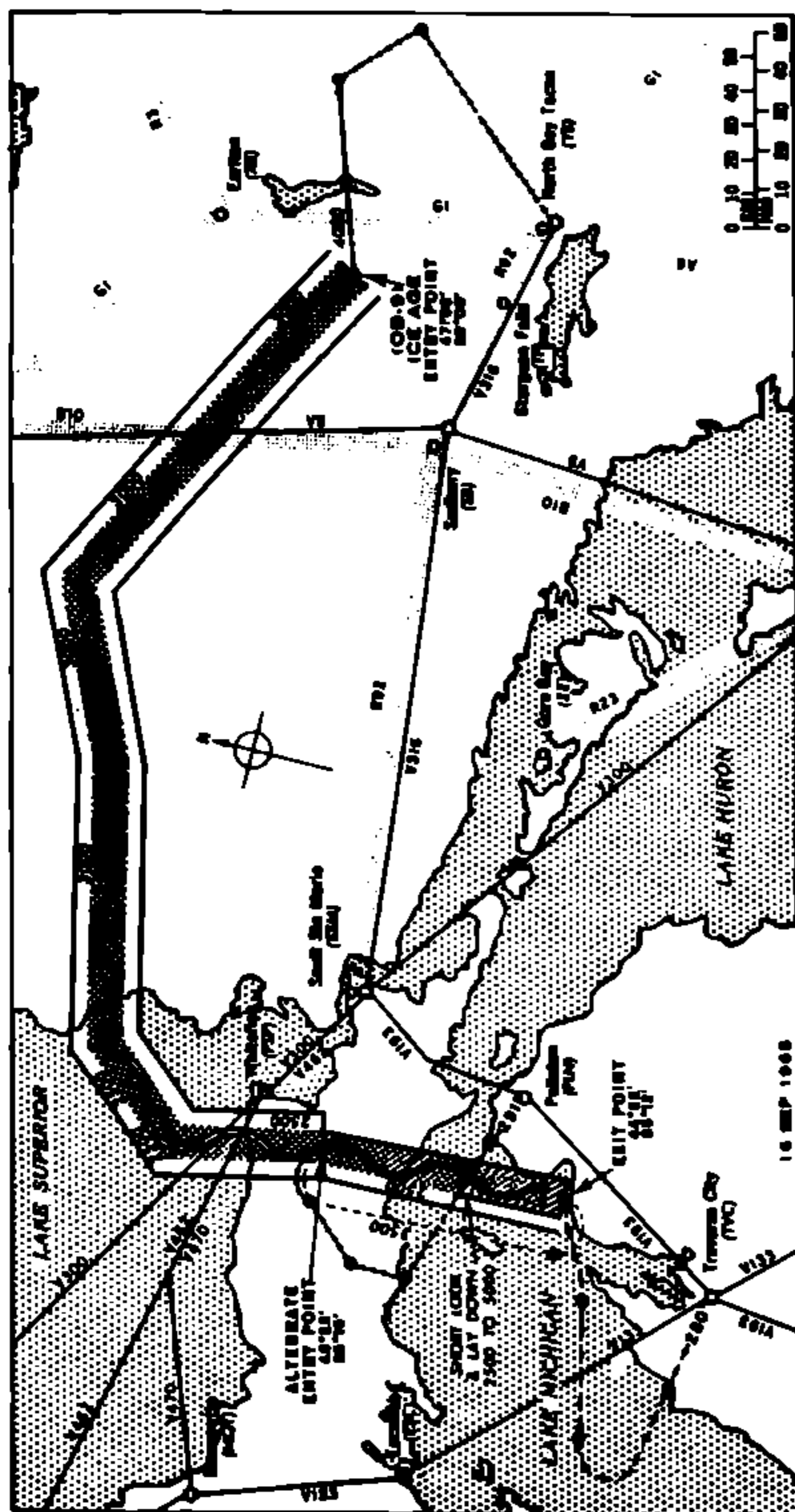
Revised Effective June 24, 1965

Start descent over North Bay Ont. TACAN from FL 250 or as otherwise assigned to 17,000' MSL direct 47°04'N, 78°25'W, descend to 10,000' MSL direct to 47°22'N, 78°48'W, descend to 4000' MSL direct to 47°15'N, 70°25'W, maintain 4000' MSL direct to low level entry point at 47°08'N, 80°00'W (aircraft shall maintain an altitude below 3500' AGL on the low level route while in Canadian airspace), descend so as to cross 47°22'N, 80°35'W at 3000' MSL, then maintain 3000' MSL direct 47°58'N, 82°15'W, then at 3000' MSL direct to 47°40'N, 83°16'W, then at 3000' MSL direct 47°23'N, 85°00'W, then descend direct 47°06'N, 85°22'W at 2500' MSL (termination of Canadian portion of route). Aircraft shall enter the U.S.A. at 47°08'N, 85°22'W at 2500' MSL, direct 47°00'N, 85°30'W at 2500' MSL, direct 46°23'N, 85°16'W at 2500' MSL, direct 45°48'N, 85°15'W at 2500' MSL.

Short Look and Lay Down—After passing 45°48'N, 85°15'W aircraft shall maintain between 2500' MSL and 5000' MSL through the bomb run corridor (4 NM either side of centerline from 45°48'N, 85°15'W to 45°22'N, 85°12'W. The minimum IFR altitude through the bomb run corridor is 2500' MSL); after passing 45°22'N, 85°12'W then turn right climbing so as to cross 45°10'N, 85°47'W at 10,000' MSL; then climb direct so as to cross 45°01'N, 86°33'W at 12,000' MSL. Turn left to intercept 280° radial of the Traverse City VOR climbing so as to cross Traverse City VOR 280/25 at FL 210. Continue climbing via the Traverse City VOR 280° radial so as to cross the Traverse City VOR at FL 250.

Re-Entry—After completing the initial bomb run, aircraft that are scheduled to execute an additional bomb run shall, after exiting the route at 45°22'N, 85°12'W turn right climbing so as to cross 45°21'N, 85°32'W at 3,500' MSL, then at 3,500' MSL direct to 46°23'N, 85°37'W; then turn right descending so as to cross 46°23'N, 85°16'W at 2500' MSL; thence via the "Ice Age" route.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3000', visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart



and 500' above the immediate terrain between the following points: from 47°08'N, 80°00'W to 45°27'N, 85°13'W. VFR operations conducted during the hours of darkness will not be flown lower than 800' above the terrain.

Alternate Entry—Aircraft shall cross the Pellston, Michigan VOR at FL 200, or as assigned by ARTOC; then proceed via the 291° radial of the Pellston VOR at FL 200 or assigned altitude until crossing the Pellston VOR 291/15; then descend direct so as to cross 45°55'N, 85°55'W at 8000' MSL; then continuing descent turn right direct so as to cross 46°09'30''N, 85°55'W at or below 4000' MSL; then continue descent so as to cross 46°23'N, 85°37'W at 2500' MSL, then at 2500' MSL turn right to 46°23'N, 85°16'W; thence via the "Ice Age" route.

Route Width—The route width is reduced to 4 NM

east of centerline from 46°23'N, 85°16'W to 45°22'N, 85°12'W.

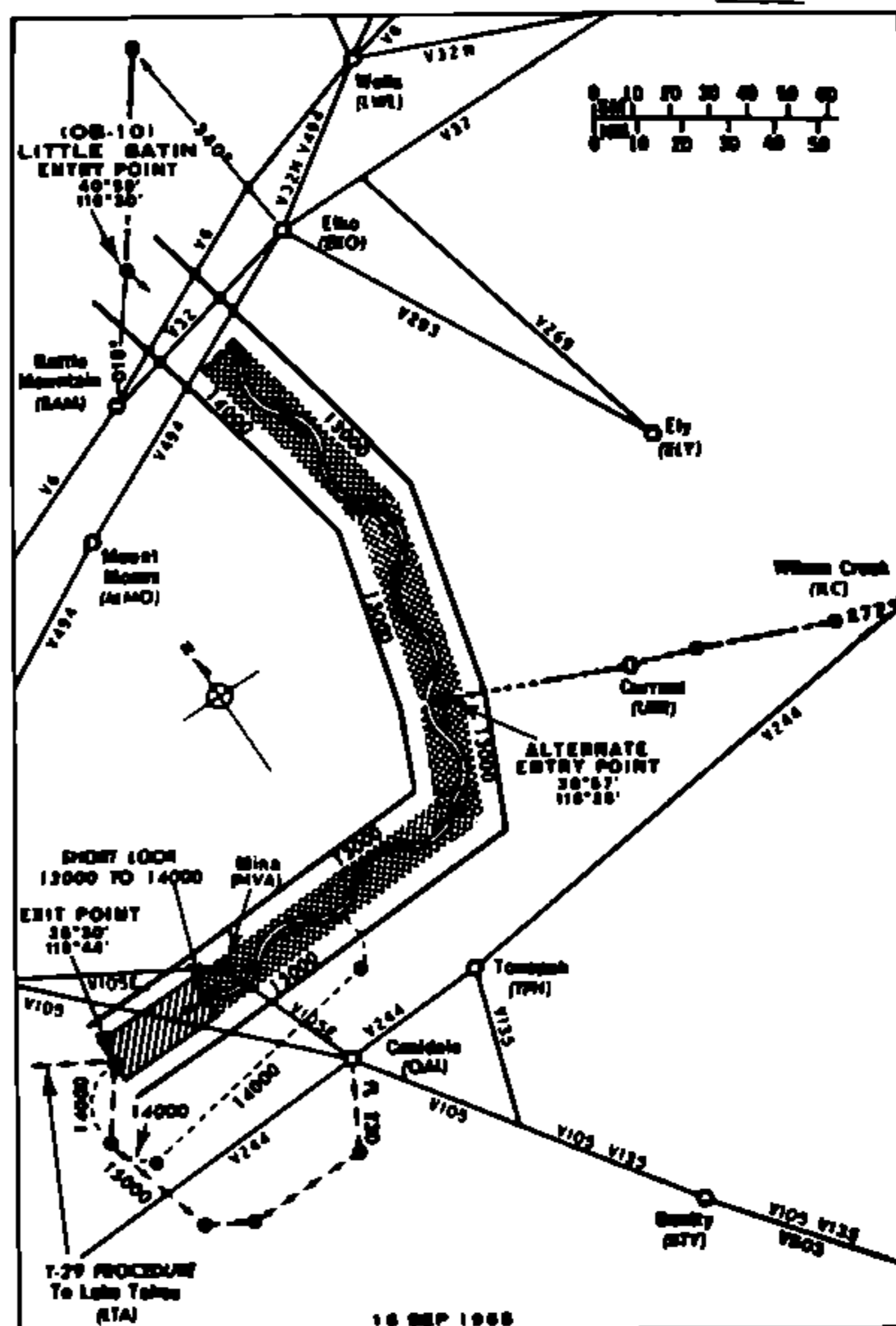
Hours of Operation—0000Z to 2400Z, 7 days a week.

NEVADA

LITTLE SATIN OB-10

Revised Effective June 24, 1965

Aircraft shall cross 41°40'N, 115°49'W (Elko VORTAC 340°/55 NM DME fix) (reporting point) at FL 230 or as assigned by ARTOC; then descend direct to cross the route entry point, 40°59'N, 116°80'W (Battle Mountain VOR 018°/81) at 14,000' MSL, then 14,000'



MSL direct 40°10'N, 116°17'W; then descend to 13,000' MSL direct 39°42'N, 116°10'W, then 13,000' MSL direct 38°57'N, 116°26'W, then 13,000' MSL direct 38°84'N, 116°40'W, then 13,000' MSL direct 38°81'N, 118°12'W.

Short Look—After passing 38°81'N, 118°12'W aircraft shall operate between a maximum altitude of 14,000' MSL and a minimum of 13,000' MSL thru the bomb run corridor (4 NM either side of centerline from 38°31'N, 118°12'W to 38°30'N, 118°44'W). After exiting the route at 38°30'N, 118°44'W aircraft shall start climb to cross 39°15'N, 118°57'W at 15,000' MSL; then maintain 15,000' MSL direct 37°49'N, 118°48'W; then climb so as to cross 37°42'N, 118°36'W at or above 17,000' MSL; then climb direct to cross 37°42'N, 118°00'W at FL 230; then direct to the Coaldale, Nev. VORTAC.

Re-Entry—After completing the initial bomb run aircraft that are scheduled to execute an additional bomb run shall, after exiting the route at 38°30'N, 118°44'W, maintain 14,000' MSL direct 38°15'N, 118°57'W, then 14,000' direct 38°08'N, 118°50'W direct 38°17'N, 117°30'W; then descend direct to cross 38°32'N, 117°35'W at 13,000' MSL; thence via the published route.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3000' visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 800' above the immediate terrain between the following points: from 40°30'N, 116°22'W to 38°31'N, 116°12'W. VFR operations will not be conducted during the hours of darkness.

Alternate Entry—Aircraft shall cross the Wilson Creek, Nevada VOR (reporting point) at FL 290 or as assigned by ARTCC, then maintain assigned flight level via the Wilson Creek VOR 277° radial until 15 NM northwest of the Wilson Creek VOR (38°21'N, 114°41'W); then descend direct to cross 38°34'N, 115°18'W at or below 15,000' MSL; then descend direct via the Currant, Nev. VOR to cross 38°57'N, 116°26'W at 18,000' MSL, thence via the published route.

T-29 Procedure—Aircraft shall cross Wilson Creek, Nevada, VOR (38°15'N, 114°23'W) (reporting point) as assigned by the ARTCC; then proceed via alternate entry route to 38°30'N, 118°44'W exit point of the bomb run corridor; then climb to 14,000' MSL or as assigned by the ARTCC direct Lake Tahoe, California, VOR (39°11'N, 120°16'W).

Hours of Operation—24 hours daily, 7 days a week.

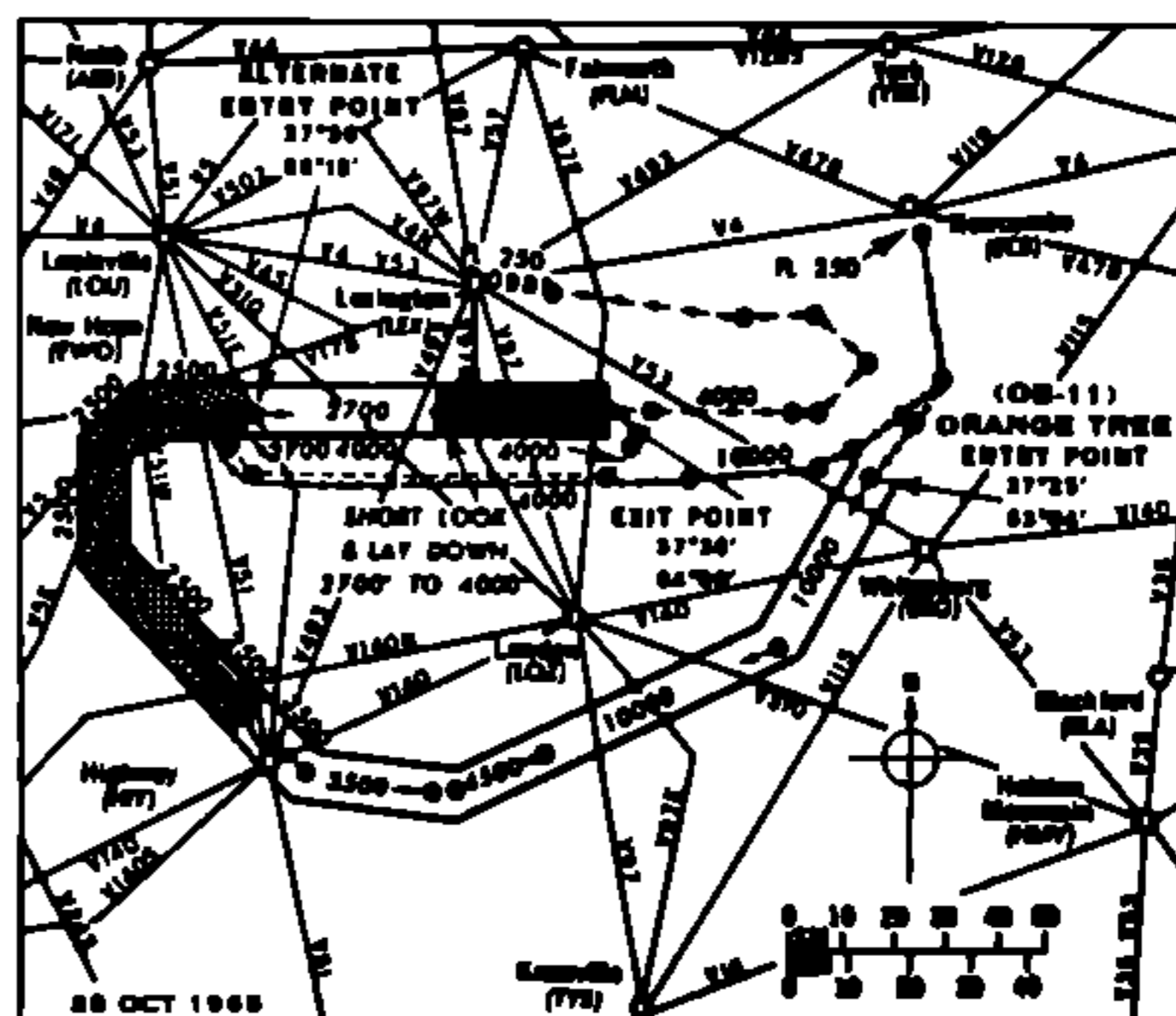
KENTUCKY/TENNESSEE

• ORANGE TREE OB-11

Revised Effective October 28, 1965

Aircraft shall cross the Newcomb, Kentucky VOR at FL 250; maintain FL 250 direct 38°05'N, 82°53'W; then start descent so as to cross 37°41'N, 82°48'W at 17,000' MSL; cross 37°34'N, 82°55'W at 14,000' MSL; then continue descent so as to cross the route entry point at 37°25'N, 83°04'W at 10,000' MSL, then at 10,000' MSL direct 36°57'N, 83°25'W, then at 10,000' MSL direct 36°38'N, 84°13'W; then start descent so as to cross 36°31'N, 84°33'W at 4500' MSL; then descend so as to cross 36°31'N, 84°36'W at 3500' MSL, then at 3500' MSL direct 36°34'N, 85°03'W, then at 3500' MSL direct 36°46'N, 85°16'W; then descend so as to cross 36°51'N, 85°22'W at 2500' MSL, then at 2500' MSL direct 37°11'N, 85°47'W, then at 2500' MSL direct 37°30'N, 85°46'W, then at 2500' MSL turn right to 37°35'N, 85°42'W, then at 2500' MSL direct 37°36'N, 85°17'W; then climb so as to cross 37°36'N, 85°15'W at 2700' MSL, then at 2700' MSL direct to 37°36'N, 84°55'W.

Short Look and Lay Down—After passing 37°36'N, 84°35'W aircraft shall maintain between 2700' MSL and 4000' MSL through the bomb run corridor (4 NM either side of centerline from 37°36'N, 84°35'W to 37°36'N, 84°00'W; the minimum IFR altitude thru the bomb run corridor is 2700' MSL). After exiting the route at 37°36'N, 84°00'W aircraft shall cross 37°36'N, 83°50'W at 4000' MSL; then at 4000' MSL direct 37°36'N, 83°20'W; then start climb direct 37°36'N, 83°15'W; cross 37°44'N, 83°05'W at or below 8000' MSL; continue climb direct 37°52'N, 83°15'W; then climbing direct so as to cross 37°51'N, 83°30'W at or below 17,000' MSL; then via the Lexington VORTAC 098° radial climbing so as to cross 37°56'N, 84°11'W (Lexington VORTAC 098/14) at FL 250, then at FL 250 direct to Lexington VORTAC.



Re-Entry—After completing the initial bomb run aircraft that are scheduled to execute an additional bomb run shall, after exiting the route at 37°36'N, 84°00'W, turn right so as to cross 37°31'N, 83°55'W at 4000' MSL, then at 4000' MSL continue right turn to 37°26'N, 84°00'W, then at 4000' MSL direct 37°26'N, 85°15'W; then turn right descending so as to cross 37°31'N, 85°20'W at 2700' MSL, then at 2700' MSL continue right turn to 37°36'N, 85°15'W, thence via the "ORANGE TREE" route.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3000', visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 800' above the immediate terrain between the following points: From 36°46'N, 85°16'W to 37°36'N, 85°15'W. VFR operations will not be conducted during the hours of darkness.

Alternate Entry—Aircraft shall cross the Newcomb, Ky. VOR at FL 250, then at FL 250 direct 38°05'N, 82°53'W; then start descent so as to cross 37°41'N, 82°48'W at 17,000' MSL; cross 37°35'N, 82°56'W at 14,000' MSL; cross 37°29'N, 83°08'W at 10,000' MSL; then at 10,000' MSL direct 37°26'N, 83°15'W; direct 37°26'N, 83°42'W; then start descent so as to cross 37°26'N, 84°00'W at 4000' MSL; then at 4000' MSL direct to 37°26'N, 85°15'W; then turn right descending so as to cross 37°31'N, 85°20'W at 2700' MSL; then at 2700' MSL direct to 37°36'N, 85°15'W; thence via the established route.

Route Width—The route width is reduced to 4 nautical miles on either side of centerline throughout the entire route.

Hours of Operation—0000Z to 2400Z, 7 days weekly.

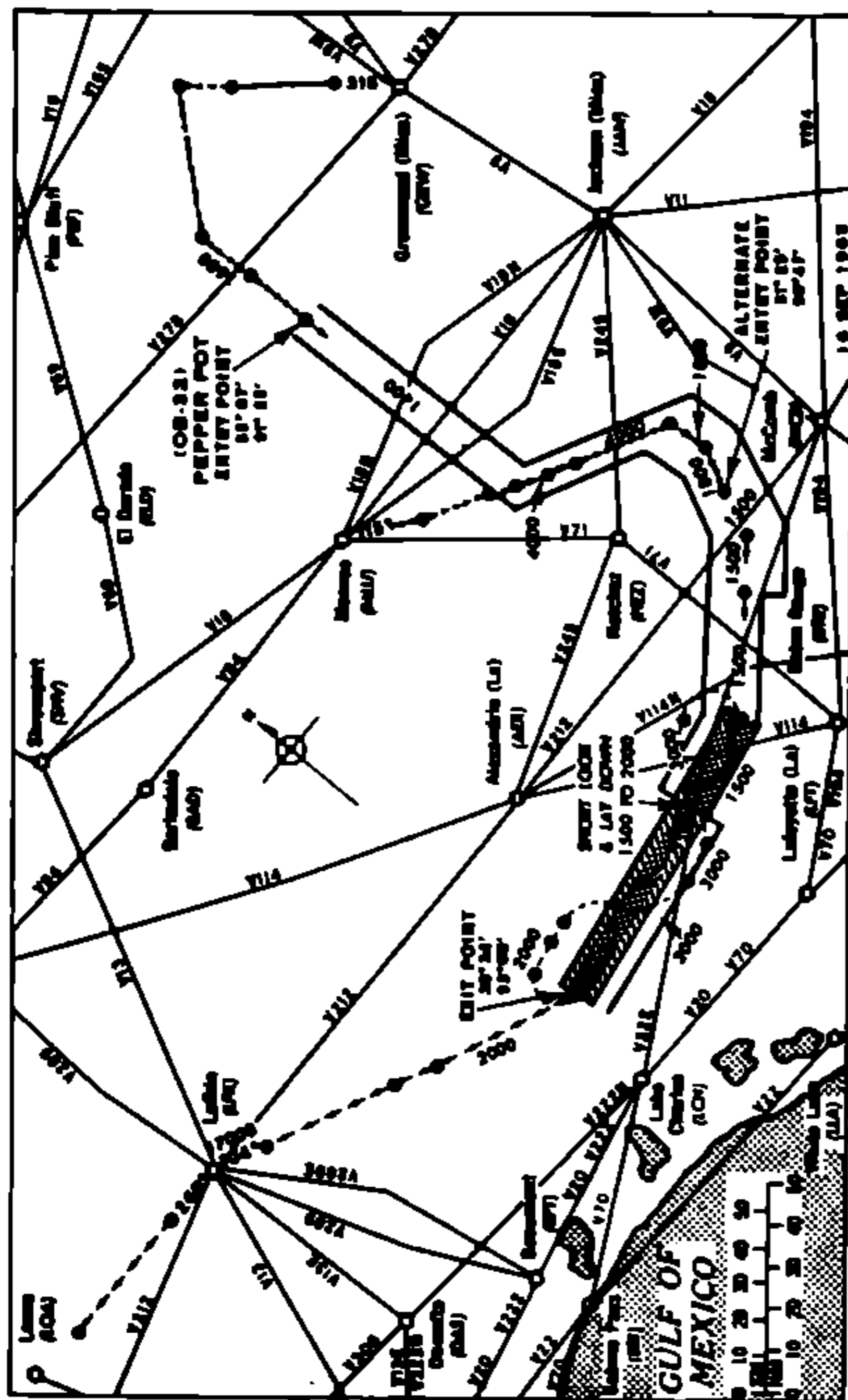
LOUISIANA/MISSISSIPPI

PEPPER POT OIL BURNER ROUTE OB-32

Effective July 12, 1965 thru December 22, 1965

Aircraft shall cross the Greenwood, Mississippi, VORTAC at FL-230, or as assigned by ARTC; maintain assigned FL via 315° radial of the Greenwood VORTAC until 15 NM NW (33°40'N, 90°28'W); then descend direct so as to cross 33°58'N, 90°46'W at 15,000' MSL; then descend direct so as to cross 34°07'N, 90°55'W at

12,000' MSL; then turn left descending so as to cross 83°40'N, 91°25'W at 1,600' MSL; then at 1,600' MSL direct to 83°25'N, 91°25'W; then descend direct so as to cross the low level entry point at 83°07'N, 91°25'W at 1,400' MSL; then 1,400' MSL direct to 32°04'N,



91°24'W, then climb direct so as to cross 32°00'N, 91°15'W at 4,000' MSL; then at 4,000' MSL direct to 31°46'N, 90°44'W; then turn right descending so as to cross 31°36'N, 90°41'W at 1,800' MSL; then at 1,800' MSL direct to 31°15'N, 90°52'W, then descend direct so as to cross 31°06'N, 91°05'W at 1,500' MSL; then at 1,500' MSL direct to 30°47'N, 91°32'W; then at 1,500' MSL direct to the entry of the bomb run corridor at 30°43'N, 92°00'W.

Short Look and Lay Down—After passing 30°43'N, 92°00'W, aircraft shall maintain between 1,500' MSL and 2,000' MSL through the bomb run corridor (4 NM on each side of centerline from 30°43'N, 92°00'W to 30°34'N, 93°00'W). After exiting the route at 30°34'N, 93°00'W aircraft shall climb to or maintain 2,000' MSL, direct to 30°47'N, 93°40'W; then climb so as to cross 30°51'N, 93°51'W at 7,000' MSL; then continue climb direct so as to cross 31°04'N, 94°27'W at 17,000' MSL; then at 17,000' MSL via the Lufkin, Texas, VORTAC 104° and 260° radials to the Lufkin, Texas, VORTAC

260/15 (31°09'N, 95°00'W); then climb so as to cross the Lufkin, Texas, VORTAC 260/49 (31°08'N, 95°40'W) at FL 250.

No-Entry—After completing the initial bomb run, aircraft that are scheduled to execute an additional bomb run shall after exiting the route at 30°34'N, 93°00'W, turn right and climb to or maintain 2,000' MSL to 30°44'N, 93°03'W; then at 2,000' MSL direct to 30°46'N, 92°53'W; then climb direct so as to cross 30°47'N, 92°47'W at 3,000' MSL; then at 3,000' MSL direct to 30°33'N, 92°18'W; then at 3,000' MSL turn left to 30°35'N, 92°05'W then at 3,000' MSL direct to 30°58'N, 91°42'W; then turn right descending so as to intercept the Pepper Pot route at 30°47'N, 91°32'W at 1,500' MSL; thence via the published route.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3,000; visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 500' above the immediate terrain between the following points: From 30°47'N, 91°32'W to 30°34'N, 93°00'W. VFR operations conducted during the hours of darkness will not be flown lower than 800' above the terrain.

Alternate Entry—Aircraft shall cross the Monroe, Louisiana, VORTAC at FL 250 or as assigned by ARTCC; maintain assigned flight level via the Monroe VORTAC 115° radial to the 20 NM fix (32°16'30'N, 91°46'W); then descend so as to cross 32°07'N, 91°28'W at FL 200; then descend so as to cross 31°58'N, 91°08'W at 13,000' MSL; then descend so as to cross 31°46'N, 90°44'W at 10,000' MSL; then turn right descending to 31°36'N, 90°41'W; then descend direct so as to cross 31°25'N, 90°47'W at 1,800' MSL; thence via the published route.

Route Width—The route width is reduced to 4 NM on each side of the route centerline from 33°07'N, 91°25'W to 31°46'N, 90°44'W. The route width is reduced to 4 NM on the south side of the centerline from 31°08'N, 91°05'W to 30°43'N, 92°00'W and 5 SM on the north side of the centerline from 30°43'N, 92°00'W to 30°34'N, 93°00'W.

Hours of Operation—24 hours daily, 7 days a week, except VFR segment 0600Z thru 1100Z 7 days a week.

ARIZONA/NEW MEXICO

• PHONE BOOK OB-35

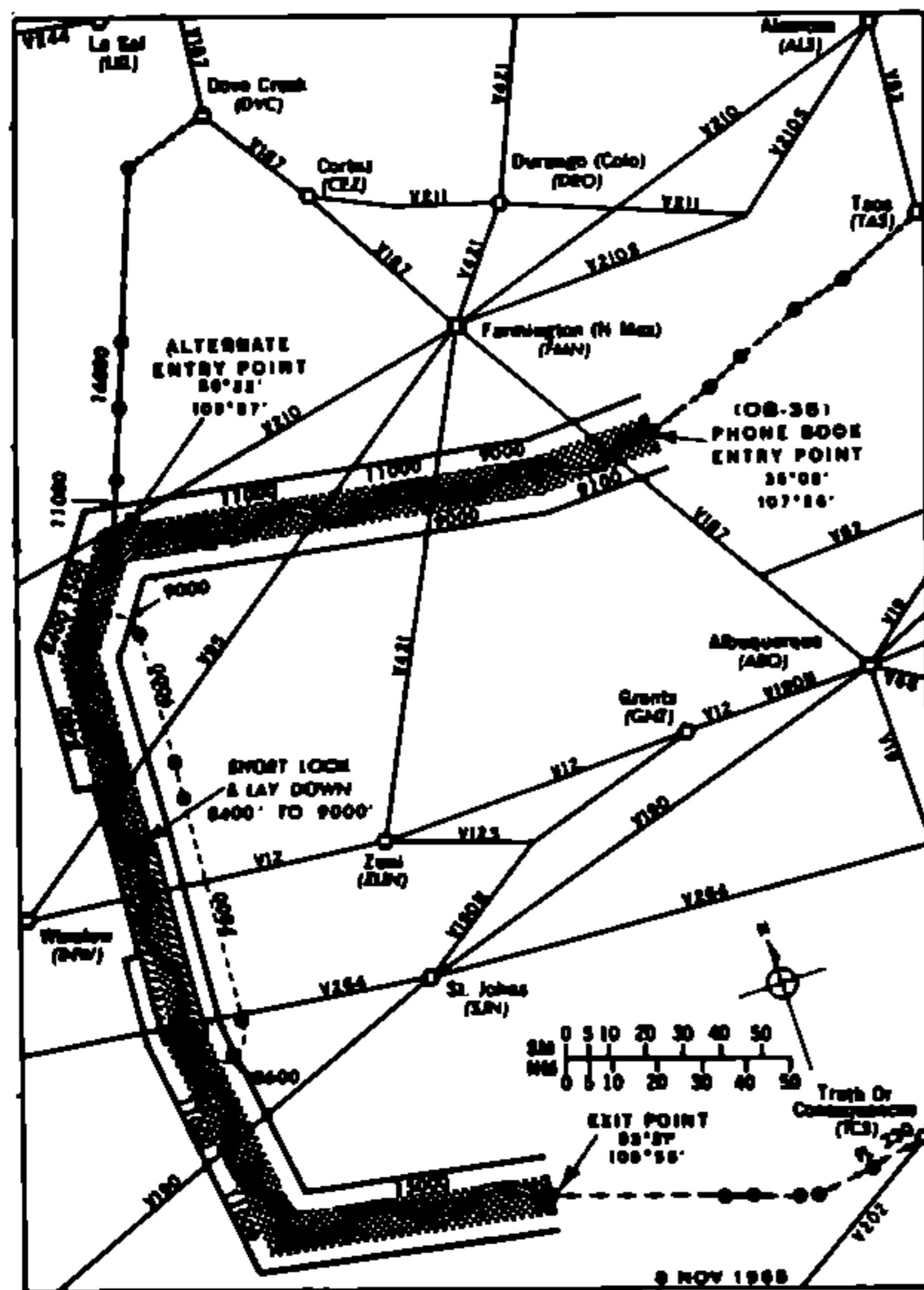
Effective November 8, 1965 thru March 26, 1966

Aircraft shall cross the Taos, New Mexico VOR(Las Vegas, New Mexico VORTAC 813/68) at FL 250 or as assigned by ARTCC; then descend direct so as to cross 36°28'N, 106°23'W at FL 220; then descend direct so as to cross 36°24'N, 106°39'W at FL 180; then descend direct so as to cross 36°18'N, 106°56'W at 16,000' MSL; then descend direct so as to cross 36°14'30'N, 107°07'30'W at or above 11,500' MSL; then descend direct so as to cross 36°09'N, 107°26'W (low level entry point) at 9,100' MSL; then at 9,100' MSL direct to 36°08'N, 108°00'W; then descend direct so as to cross 36°10'N, 108°16'W at 9,000' MSL; then at 9,000' MSL direct to 36°12'N, 108°34'W; then climb direct so as to cross 36°13'N, 108°43'W at 11,000' MSL; then at 11,000' MSL direct 36°22'N, 109°57'W; then descend direct so as to cross 30°03'N, 110°12'W at 9,500' MSL; then descend so as to cross 36°00'N, 110°15'W at 8,400' MSL; then at 8,400' MSL direct to 35°13'N, 110°16'W.

Short Look and Lay Down—After passing 35°18'N, 110°16'W, aircraft shall operate between 8,400' MSL and 9,000' MSL through the bomb run corridor (4 NM either side of centerline from 35°13'N, 110°16'W, to 34°30'N, 110°18'W.) After exiting the Bomb run corridor at 34°30'N, 110°18'W, aircraft shall climb so as to cross 34°20'N, 110°15'W at 11,000' MSL; then at 11,000' MSL direct

to 33°56'N, 110°11'W; then climb direct so as to cross 33°41'N, 110°08'W at 15,000' MSL; then at 15,000' MSL direct to 33°31'N, 108°50'W (route exit point); then at 15,000' MSL direct to 33°20'N, 108°13'W; then climb direct so as to cross 33°18'N, 108°00'W at 17,000' MSL; then climb direct so as to cross 33°14'N, 107°54'W at FL 100; then climb direct so as to cross 33°13'N, 107°49'W at FL 200; then climb direct so as to cross 33°15'N, 107°33'W at FL 230; then at FL 230 direct to the Truth or Consequences, New Mexico VORTAC.

Re-entry—After completing the initial bomb run, aircraft that are scheduled to execute an additional bomb run shall, after exiting the bomb run corridor at 34°30'N, 110°18'W, turn left and climb or descend so as to cross 34°27'N, 110°17'W at 8600' MSL; then at 8600' MSL continue left turn to 34°23'N, 110°07'W; then continue left turn and descend so as to cross 34°30'N, 110°02'W at 7800' MSL; then at 7800' MSL direct to 35°22'N, 109°59'W; then climb so as to cross 35°20'N, 109°50'W at 9000' MSL; then at 9000' MSL direct to 36°00'N, 109°58'W then at 9000' MSL turn left to 36°03'N, 110°14'W; then continue left turn and descend so as to intercept the route at 36°00'N, 110°15'W at 8400' MSL; thence via the published route.



VFR and Ceilings—If the encountered weather conditions along the route are equal to or better than ceiling 3,000'; visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 800' above the immediate terrain between the following points: From 36°00'N, 107°28'W to 33°31'N, 108°58'W. VFR operations will not be conducted during the hours of darkness.

Alternate Entry—Aircraft shall cross the Dove Creek, Colorado VORTAC at FL 240; then descend direct so as

to cross 37°42'N, 109°22'W at FL 180; then descend direct so as to cross 37°05'N, 109°38'W at 16,000' MSL; then at 16,000' MSL direct to 36°51'N, 109°44'W; then descend direct so as to cross 36°35'N, 109°51'W at 11,000' MSL; then at 11,000' MSL direct to 36°22'N, 109°57'W; thence via the published route.

Route Width—The route width is reduced to 4 NM on the west side of the centerline from 35°30'N, 110°16'W to 34°50'N, 110°17'W.

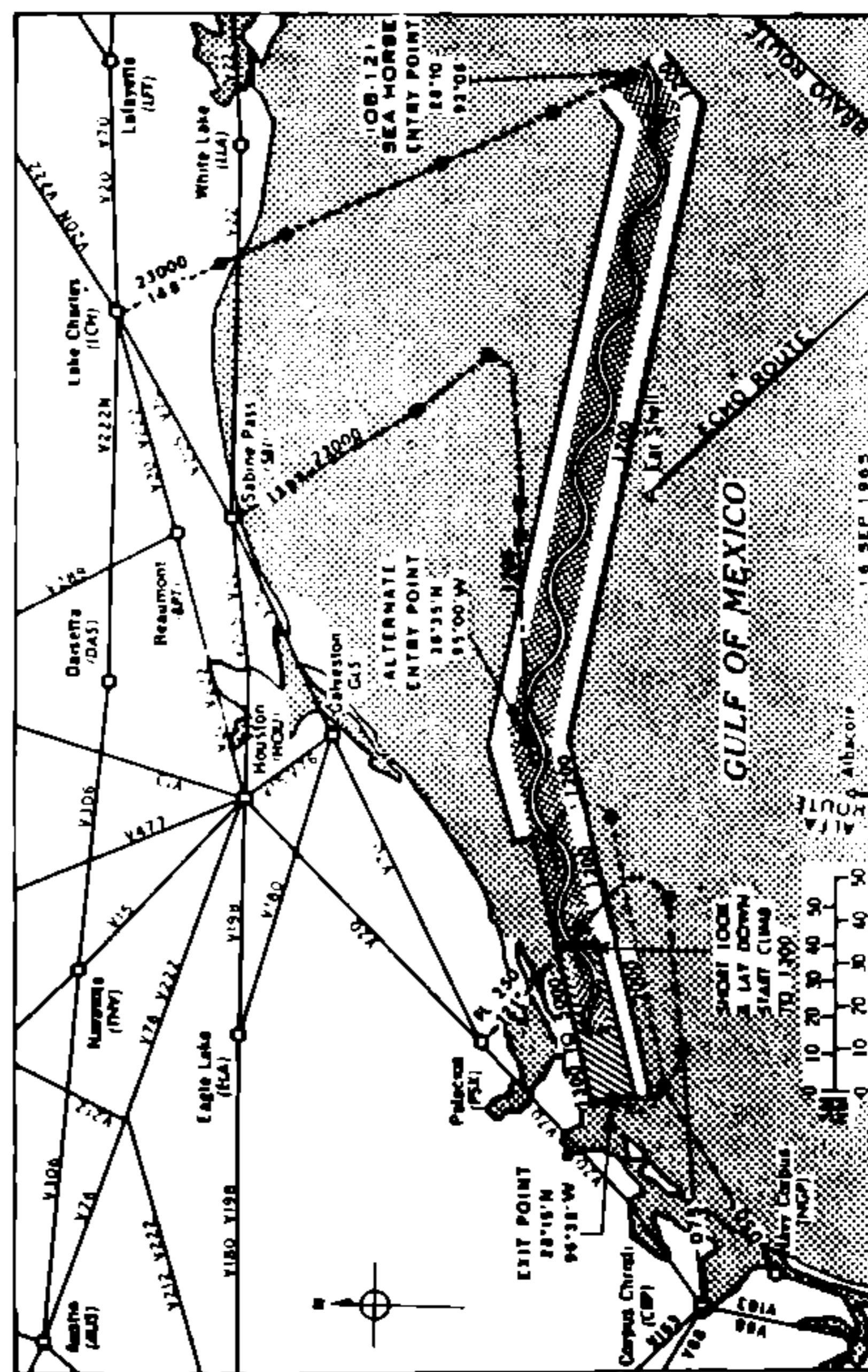
Hours of Operation—1900Z through 1500Z daily, 7 days per week.

TEXAS

SEA HORSE OB-12

Revised Effective May 25, 1965

Aircraft shall cross the Lake Charles, La., VOR at 23,000' MSL, or as assigned; maintain 23,000' MSL or as assigned via the Lake Charles VOR 149° radial to



to 25 NM fix; start descent, cross 29°31'N, 92°47'W at 10,000' MSL, descend direct to cross 28°55'N, 92°28'W at 15,000' MSL, descend direct to cross 28°28'N, 92°15'W at 8000' MSL or below, descend direct to cross 28°10'N, 92°08'W at 1200' MSL (low level entry point). Maintain 1200' MSL, turn right to 28°03'N, 92°16'W, direct 28°35'N, 95°00'W, direct 28°24'N, 95°53'W.

Short Look and Lay Down—After passing 28°24'N, 95°53'W climb to 1300' MSL and maintain between 1300' MSL and 5000' MSL through the bomb run corridor (4 NM

either side of centerline from 28°24'N, 95°53'W direct 28°15'N, 96°35'W). (The minimum IFR altitude through the bomb run corridor is 1300' MSL) to 28°15'N, 96°35'W, the route exit point, turn left to 28°04'N, 96°30'W, direct to 28°00'N, 96°21'W to intercept the Corpus Christi, Texas, VORTAC 075 radial. Climb via the Corpus Christi VORTAC 075 radial to cross 28°03'N, 96°41'W, at or below 17,000' MSL; turn left to intercept the Palacios, Texas, VORTAC 121 radial, continue climb via the Palacios VORTAC 121 radial to cross the Palacios VORTAC 121/35 at or below FL 230, continue climb via the 121 radial to cross the Palacios VORTAC 121/18 at FL 250, maintain FL 250 to the Palacios VORTAC.

Re-Entry—After completing the Initial Short Look bomb run, aircraft that are scheduled to execute an additional bomb run shall, after exiting the route at 28°15'N, 96°35'W turn left to intercept the Navy Corpus VOR 050° radial at 2000' MSL, maintain 2000' MSL direct 28°17'N, 95°19'W, turn left descending so as to cross 28°30'N, 95°24'W at 1200' MSL, thence via the published route.

VFR and Cease—If the encountered weather conditions along the route are equal to or better than ceiling 8000', visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 500' above the surface between the following points: From 28°10'N, 92°06'W to 28°19'N, 96°18'W. VFR operations conducted during the hours of darkness will not be flown lower than 800' above the surface.

Alternate Entry—Aircraft shall cross the Sabine Pass VOR at FL 230 or as assigned, then via Sabine Pass VOR 139° radial maintaining FL 230 until the 47 NM fix (29°02'N, 93°33'W). Start descent direct to cross 28°44'N, 93°19'W at 16,000' MSL turn right, descend to cross 28°37'N, 93°58'W at 4000' MSL; descend direct to cross 28°37'N, 94°06'W at 1200' MSL, direct 28°35'N, 95°00'W, thence via the published route.

Route Width—The route width is reduced to 4 NM north of the centerline from 28°30'N, 95°24'W to 28°15'N, 96°35'W.

Hours of Operation—24 hours daily, seven days per week.

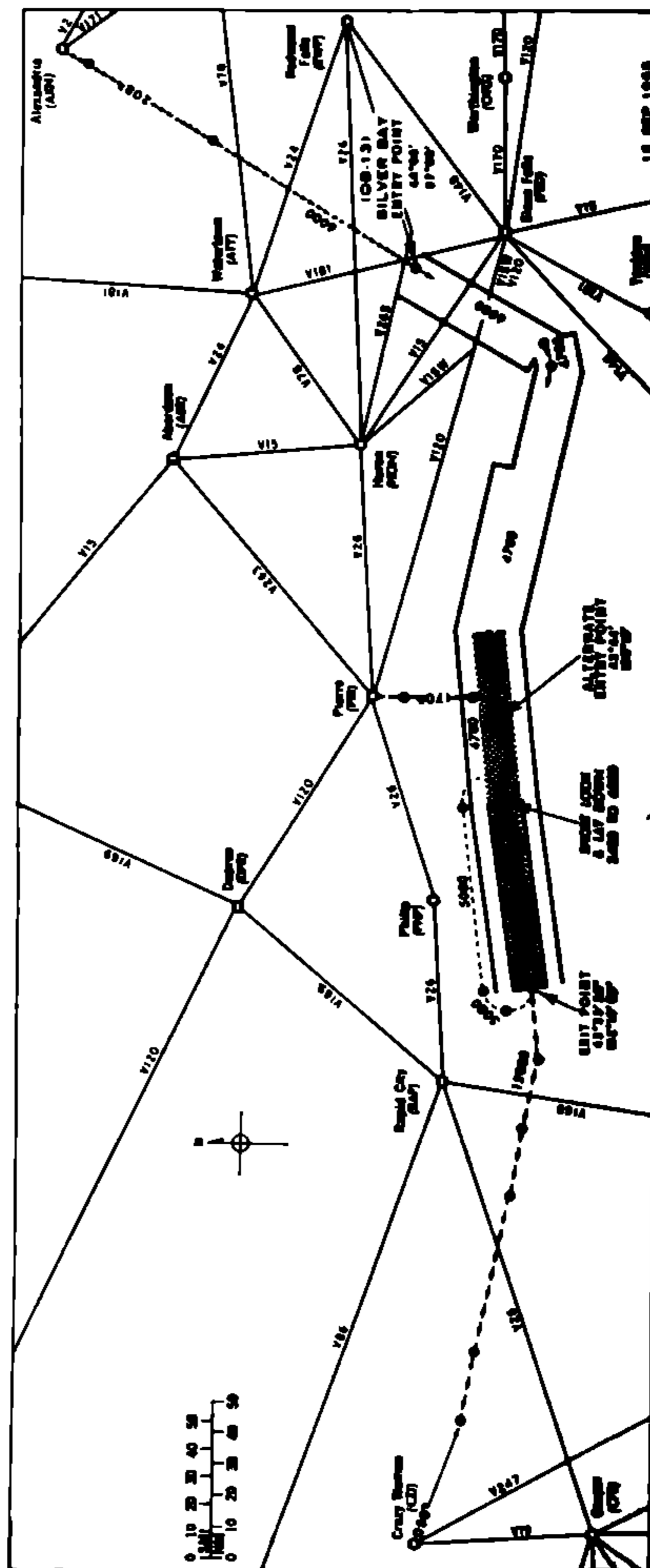
SOUTH DAKOTA SILVER BAY OB-13

Revised Effective June 24, 1965

Aircraft shall cross the Alexandria, Minn. VOR at FL 200 or as assigned by ARTCC and proceed via the Alexandria VOR 208° radial maintaining FL 200 or assigned altitude until 10 NM SW; then descend direct so as to cross 45°10'N, 96°00'W at 6000' MSL; then at 6000' MSL direct 44°08'N, 97°00'W (low level entry point); then at 6000' MSL direct 43°29'N, 97°35'W; then turn right descending so as to cross 43°27'N, 97°45'W at 4700' MSL; then at 4700' MSL direct 43°47'N, 99°45'W; then at 4700' MSL direct to 43°42'N, 100°56'W.

Short Look and Lay Down—After passing 43°42'N, 100°56'W, aircraft shall maintain between 2400' MSL and 6000' MSL through the bomb run corridor (4 NM either side of centerline from 43°42'N, 100°56'W to 43°33'30''N, 102°18'W). The minimum IFR altitude through the corridor is 4700' MSL. After exiting the route at 43°33'30''N, 102°18'W aircraft shall climb so as to cross 48°30'N, 102°50'W at 12,000' MSL; then at 12,000' MSL direct to 43°34'N, 102°20'W then climb direct so as to cross 43°37'30''N, 103°50'W at FL 180 then climb direct so as to cross 43°48'N, 105°00'W at or below FL 230 then climb direct so as to cross 43°49'N, 105°30'W (CZI 090/42 DME fix) at FL 240.

Re-Entry—After completing the initial bomb run aircraft that are scheduled to execute an additional bomb run



shall after exiting the route at 43°33'30''N, 102°18'W turn right and climb or descend so as to cross 43°40'N, 102°29'W, at 5000' MSL; then at 5000' MSL continue turn to 43°47'N, 102°20'W; then at 5000' MSL direct

43°55'N, 100°58'W; then turn right descending so as to intercept the Silver Bay route at 43°42'N, 100°58'W at 4700' MSL; thence via the published route.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3000', visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 500' above the immediate terrain between the following points: from 43°47'N, 99°45'W to 43°33'30''N, 102°18'W. VFR operations conducted during the hours of darkness will not be flown lower than 800' above the terrain.

Alternate Entry—Aircraft shall cross the Pierre, South Dakota VOR (reporting point) at 15,000' MSL or below as assigned by ARTCC; then proceed via the Pierre VOR 170° radial maintaining 15,000' MSL or assigned altitude until 10 NM south (44°18'N, 100°10'W); then descend direct to 48°52'N, 100°10'W; then turn right descending so as to cross 43°44'N, 100°19'W at 4700' MSL; thence via the published route.

Route Width—The route width is reduced to 4 NM southeast of centerline from 44°08'N, 97°00'W to 48°29'N, 97°35'W and 5 SM north of centerline between 48°29'N, 97°35'W to 43°35'N, 98°30'W.

Hours of Operation—24 hours daily seven days per week.

MICHIGAN SKI LAND OB-14

Revised Effective June 24, 1965

Aircraft shall cross the Houghton, Michigan VOR at 20,000' MSL or as assigned by ARTCC; then descend direct so as to cross 47°10'N, 89°20'W at 11,000' MSL; then turn right continuing descent so as to cross the route entry point at 47°40'N, 89°20'W at 2400' MSL, then at 2400' MSL direct 47°52'N, 89°20'W, then at 2400' MSL direct 47°48'N, 89°55'W; then descend to 2000' MSL direct 47°35'N, 87°25'W; then descend to 1700' MSL direct 46°40'N, 86°08'W; then climb so as to cross 46°42'N, 85°52'W at 2200' MSL, then at 2200' MSL direct 46°23'N, 85°16'W; then climb to 2500' MSL direct 45°48'N, 85°15'W.

Short Look and Lay Down—After passing 45°48'N, 85°15'W aircraft shall maintain between 2500' MSL and 5000' MSL through the bomb run corridor (4 NM either side of centerline from 45°48'N, 85°15'W to 45°22'N, 85°12'W. The minimum IFR altitude through the bomb run corridor is 2500' MSL); after passing 45°22'N, 85°12'W then turn right climbing so as to cross 45°10'N, 85°47'W at 10,000' MSL; then climb direct so as to cross 45°01'N, 86°33'W at 12,000' MSL. Turn left to intercept 280° radial of the Traverse City VOR climbing so as to cross Traverse City VOR 280/25 at 21,000' MSL. Continue climbing via the Traverse City VOR 280° radial so as to cross the Traverse City VOR at FL 250.

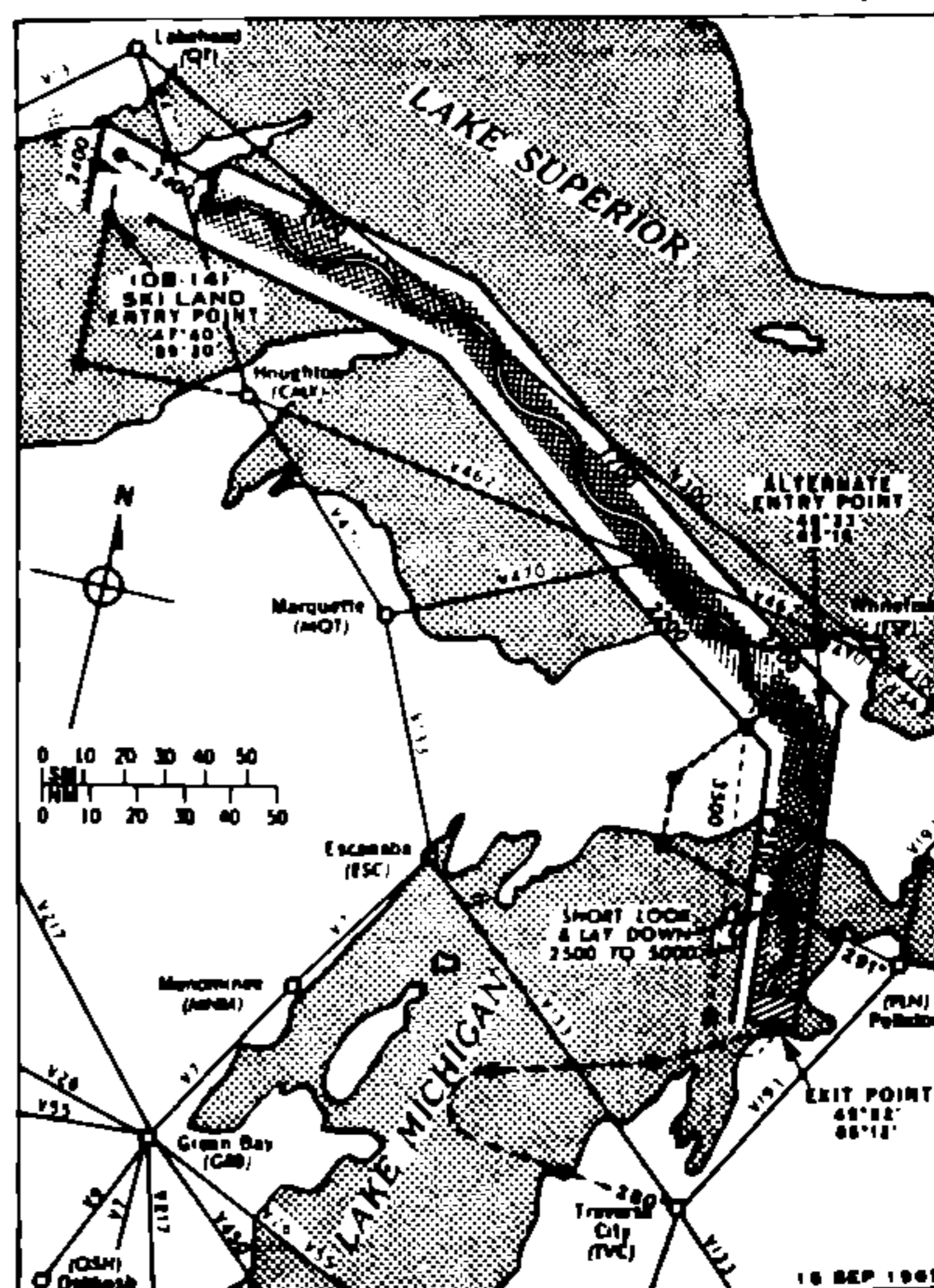
Re-Entry—After completing the initial bomb run aircraft that are scheduled to execute an additional bomb run shall, after exiting the route at 45°22'N, 85°12'W, turn right climbing so as to cross 45°21'N, 85°32'W at 3500' MSL, then at 3500' MSL direct to 46°23'N, 85°37'W; then turn right descending so as to cross 46°23'N, 85°16'W at 2500' MSL; thence via the "Ski Land" route.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3000', visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 500' above the immediate terrain between the following points: from 47°48'N, 89°55'W to 45°27'N, 85°13'W. VFR operations conducted during the hours of darkness will not be flown lower than 800' above the terrain.

Alternate Entry—Aircraft shall cross the Pellston, Mich.

VOR at 20,000' MSL, or as assigned by ARTCC; then proceed via the 291° radial of the Pellston VOR at 20,000' MSL or assigned altitude until crossing the Pellston VOR 291/15; then descend direct so as to cross 45°55'N, 85°55'W at 8000' MSL; then continuing descent turn right direct so as to cross 46°09'30''N, 85°55'W at or below 4000' MSL; then continue descent so as to cross 46°23'N, 85°37'W at 2500' MSL, then at 2500' MSL turn right to 46°23'N, 85°16'W; thence via the "Ski Land" route.

Route Width—The route width is reduced to 4 nautical miles west and north of centerline from 47°40'N, 89°.



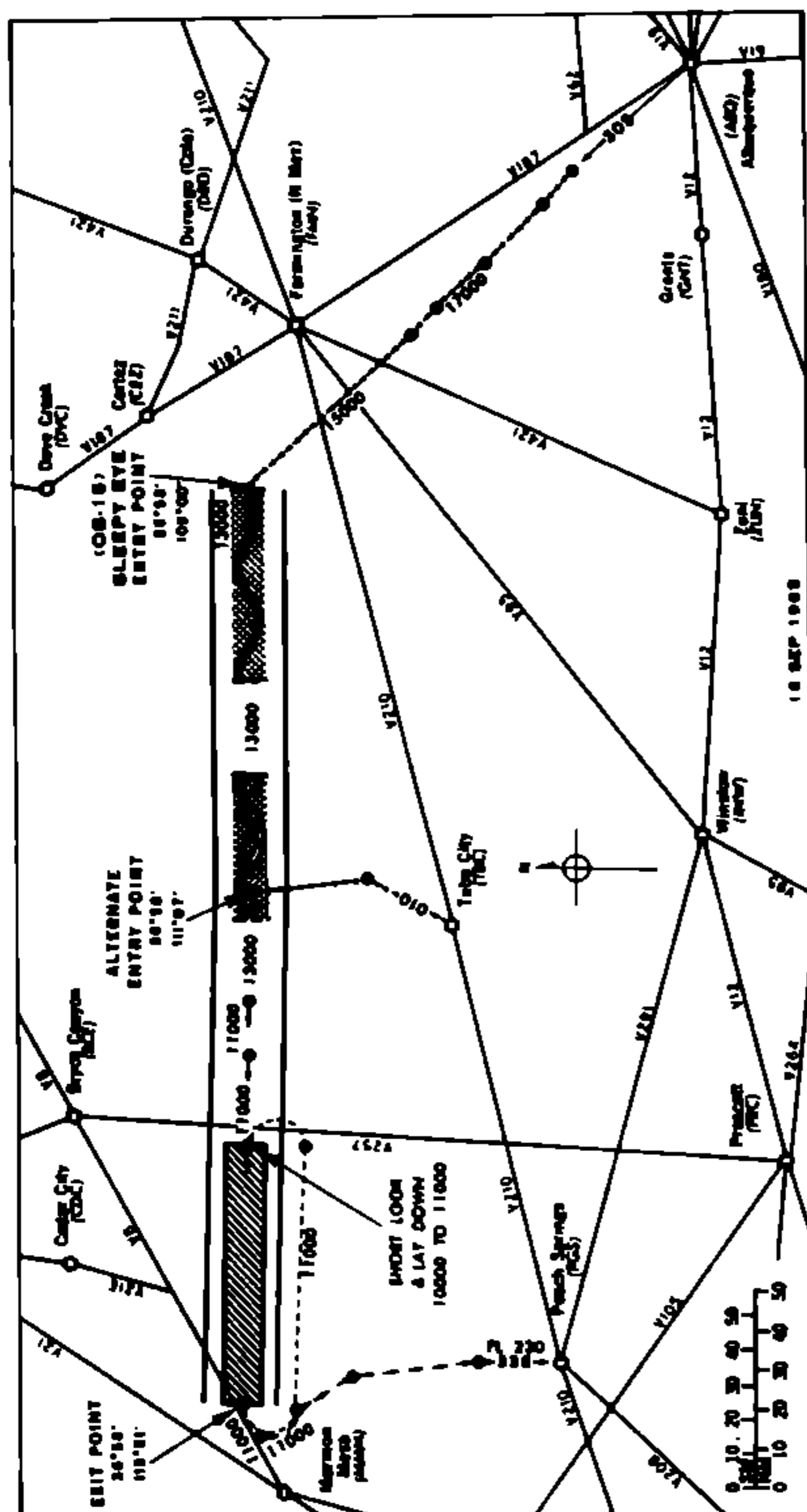
20'W to 47°48'N, 89°55'W, and east of centerline from 46°23'N, 85°16'W to 45°22'N, 85°12'W.

Hours of Operation—0000Z to 2400Z, 7 days a week.

ARIZONA/COLORADO/NEW MEXICO/UTAH SLEEPY EYE OB-15

Revised Effective July 22, 1965

Aircraft shall cross 35°34'N, 107°24'W (Albuquerque VORTAC 305/43 DME fix) at FL 250 or assigned by the ARTCC; then descend direct to cross 35°42'N, 107°33'W at FL 210; then descend direct to cross 35°57'N, 107°51'W at 17,000' MSL; then maintain 17,000' MSL direct 36°09'N, 108°04'W; then descend direct to cross 36°18'N, 108°12'W at 15,000' MSL; then 15,000' MSL direct 36°58'N, 109°00'W (low level entry point); then descend direct to cross 36°58'N, 109°10'W at 13,000' MSL; then 13,000' MSL direct 36°58'N, 111°42'W; then descend direct to cross 36°58'N, 112°00'W at 11,000' MSL; then direct to cross 36°58'N, 112°29'W at or below 11,000' MSL.



Short Look and Lay Down—After passing $36^{\circ}58'N$, $112^{\circ}29'W$ aircraft shall operate between 10,000' and 11,000' MSL through the bomb run corridor (4 NM either side of centerline from $36^{\circ}58'N$, $112^{\circ}29'W$ to $36^{\circ}58'N$, $113^{\circ}51'W$). After exiting the route at $36^{\circ}58'N$, $113^{\circ}51'W$ aircraft shall turn left climbing to cross $36^{\circ}53'N$, $114^{\circ}00'W$ at 11,000' MSL; then maintain 11,000' MSL direct to $36^{\circ}44'N$, $113^{\circ}53'W$; then climb via direct to cross $36^{\circ}30'N$, $113^{\circ}42'W$ at or below 17,000' MSL (reporting point "SLEEPY EYE" #1); then direct to cross $35^{\circ}58'N$, $113^{\circ}36'W$ (PGS 336/21 DME fix) at FL 230; then intercept and proceed via Peach Springs 336 radial to Peach Springs ($35^{\circ}37'30''N$, $113^{\circ}32'W$).

Re-Entry—After completing the initial bomb run, aircraft that are scheduled to execute an additional bomb run shall, after exiting the route at $36^{\circ}58'N$, $113^{\circ}51'W$, turn left via direct to cross $36^{\circ}53'N$, $114^{\circ}00'W$ at 11,000

MSL; then 11,000' MSL direct $36^{\circ}44'N$, $113^{\circ}53'W$; then 11,000' MSL direct $36^{\circ}44'N$, $112^{\circ}29'W$; then turn left direct to cross $36^{\circ}58'N$, $112^{\circ}29'W$ at or below 11,000' MSL; thence via published route.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3,000' visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 800' above the immediate terrain between the following points: from $36^{\circ}58'N$, $109^{\circ}00'W$ to $36^{\circ}58'N$, $110^{\circ}00'W$ to $36^{\circ}58'N$, $110^{\circ}30'W$ to $36^{\circ}58'N$, $111^{\circ}16'W$. VFR operations will not be conducted during the hours of darkness.

Alternate Entry—Aircraft shall cross the Tuba City, Arizona VOR ($36^{\circ}07'30''N$, $111^{\circ}16'W$) (Reporting Point) at FL 240 or as assigned by the ARTCC; then maintain FL 240 or assigned altitude via Tuba City 010 radial until 23 miles north ($36^{\circ}28'N$, $111^{\circ}04'W$); then descend direct to cross $36^{\circ}58'N$, $111^{\circ}07'W$ at 18,000' MSL; thence via published route.

Hours of Operation—24 hours daily, 7 days a week.

OREGON

TAIL HOOK OB-16

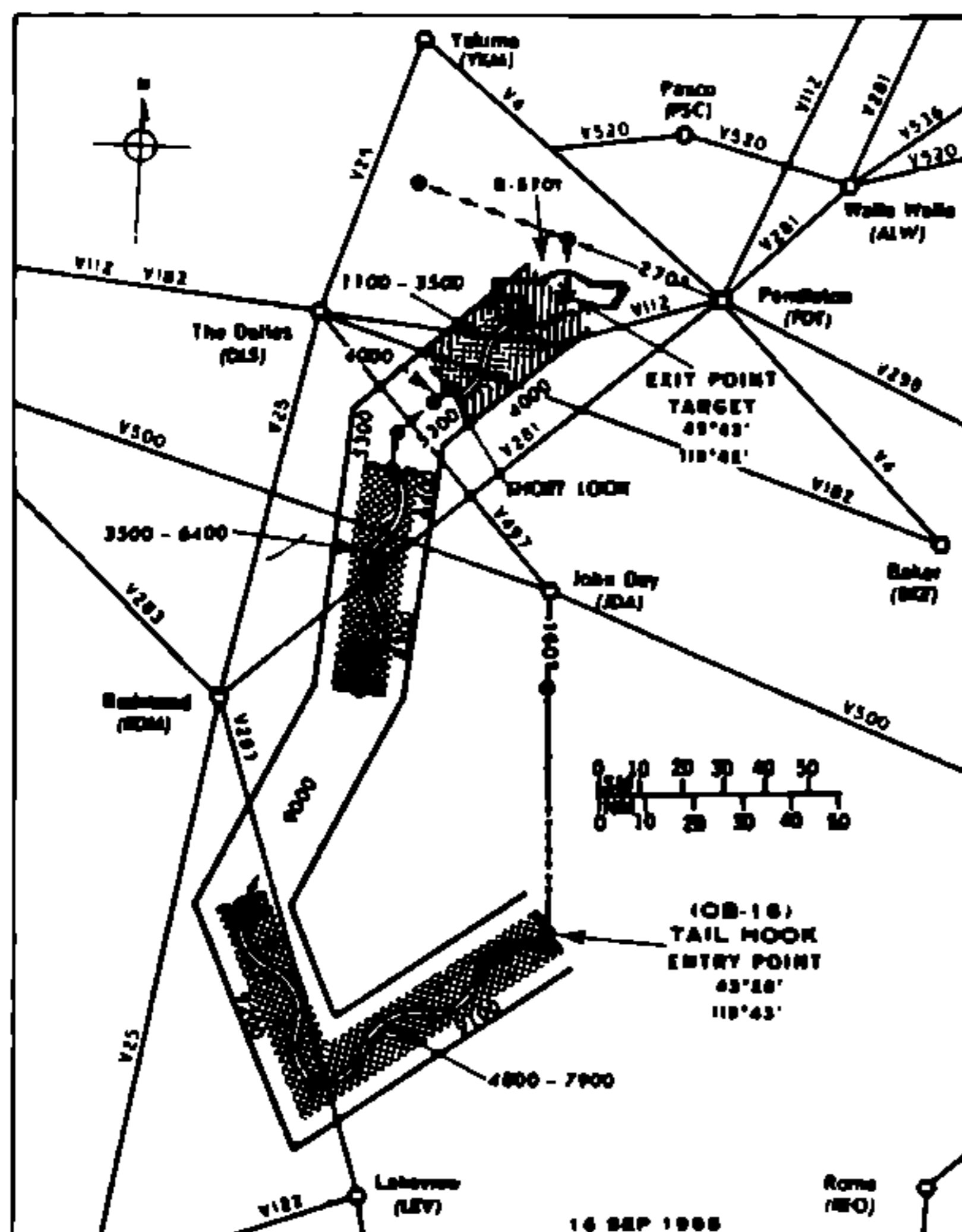
Revised Effective February 12, 1964

Aircraft shall cross the John Day, Oregon VOR (reporting point) at 23,000' MSL, or as assigned by Seattle ARTCC; then proceed via the John Day VOR 160° radial, maintaining assigned altitude until 20 nautical miles south of the John Day VOR ($44^{\circ}19'N$, $119^{\circ}43'W$); then descend to 9100' MSL to the entry point of the low level route at $43^{\circ}28'N$, $119^{\circ}43'W$; then 9100' MSL direct to $42^{\circ}54'N$, $120^{\circ}45'W$; then climb to 9200' MSL direct to $43^{\circ}31'N$, $121^{\circ}08'W$; then descend to 9000' MSL direct to $44^{\circ}18'N$, $120^{\circ}39'W$; then descend to 6300' MSL direct to $44^{\circ}40'N$, $120^{\circ}38'W$; then descend to 6400' MSL direct to $45^{\circ}05'N$, $120^{\circ}31'W$; then descend to 5300' MSL direct to $45^{\circ}13'N$, $120^{\circ}30'W$; then 5300' MSL direct to $45^{\circ}20'N$, $120^{\circ}19'W$; then descend so as to cross $45^{\circ}23'N$, $120^{\circ}13'W$ at 4000' MSL.

Short Look—After passing $45^{\circ}23'N$, $120^{\circ}13'W$, aircraft shall maintain 4000' MSL until within Restricted Area R-5701; after crossing RBS target located at $45^{\circ}49'N$, $119^{\circ}42'W$, the route exit point, aircraft shall make a climbing left turn so as to intercept the Pendleton, Oregon VORTAC 270° radial 34 nautical mile fix (reporting point) at or above 11,000' MSL; then climb westbound on the Pendleton VORTAC 270° radial so as to cross the Pendleton VORTAC 270° radial 68 nautical mile fix at 23,000' MSL.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 8000' visibility five miles, the pilot may descend VFR and operate VFR between the VFR altitudes indicated on the chart between the following points: From $43^{\circ}28'N$, $119^{\circ}43'W$ to $43^{\circ}31'N$, $121^{\circ}08'W$, from $44^{\circ}18'N$, $120^{\circ}39'W$ to $45^{\circ}05'N$, $120^{\circ}31'W$, and from $45^{\circ}23'N$, $120^{\circ}13'W$ to restricted area R-5701. During daylight hours, VFR operations will be flown 500' above the immediate terrain. VFR operations conducted during the hours of darkness shall not be flown lower than 800' above terrain. The lower VFR altitude shown on the chart is the minimum altitude that shall be reached on each route segment during daylight hours.

Hours of Operation—1600Z to 2400Z Monday thru Friday and 0000Z to 0800Z Tuesday thru Saturday.



GEORGIA/NORTH CAROLINA/SOUTH CAROLINA

WALNUT GROVE OB-17

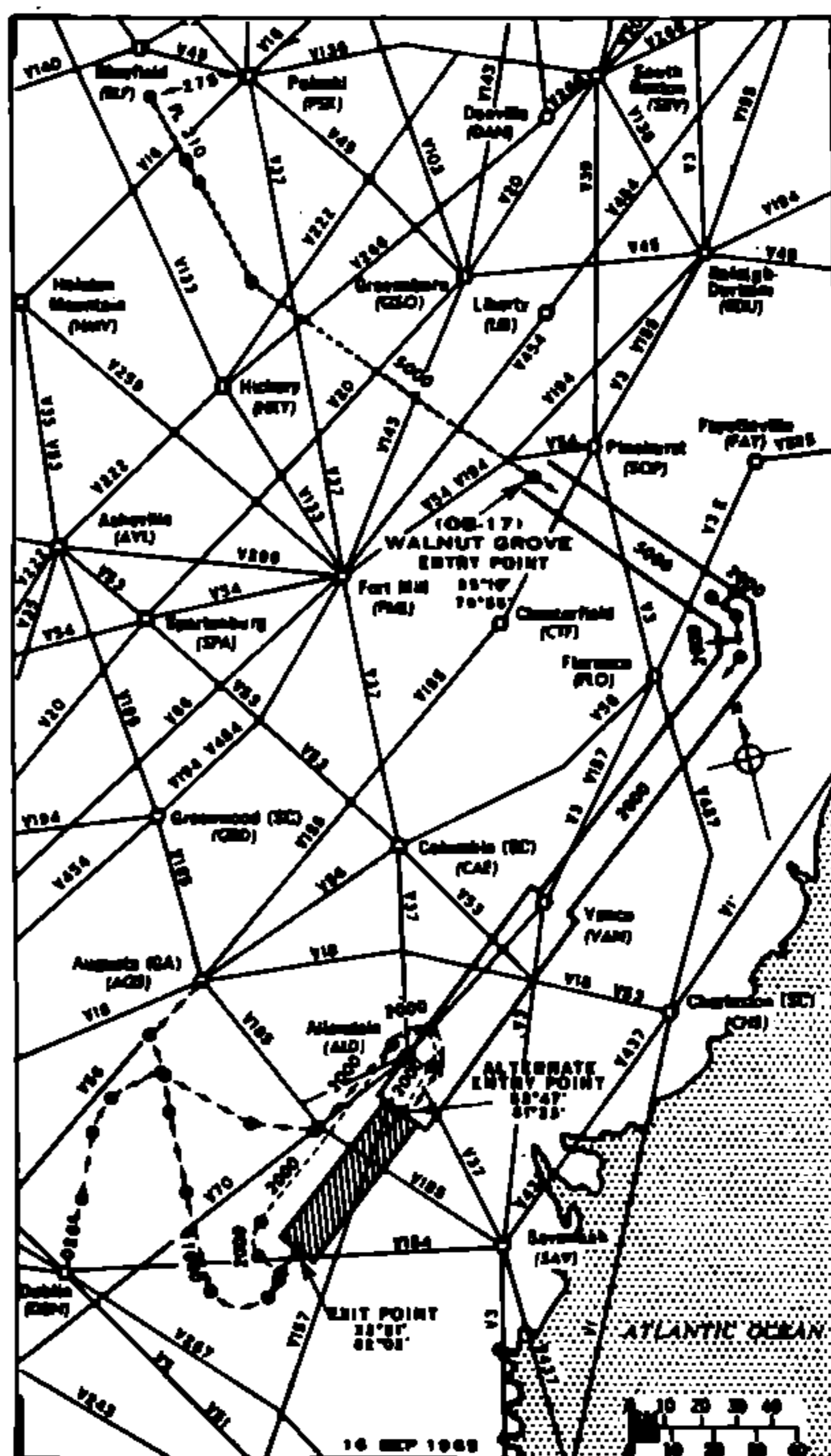
Revised Effective August 19, 1965

Aircraft shall cross the Pulaski, Virginia VORTAC 275/25 DME fix (37°06'N, 81°14'W) at FL 210 or as assigned by ARTC; then maintain and cross 36°47'N, 81°08'W at FL 210; then descend direct so as to cross 36°43'N, 81°07'W at FL 180 or above; then descend direct so as to cross 36°15'N, 81°00'W at 5000' MSL; then at 5000' MSL direct to 35°10'N, 79°55'W (low level entry point); then at 5000' MSL direct to 34°29'N, 79°16'W; then descend direct so as to cross 34°23'N, 79°11'W at 2000' MSL; then at 2000' MSL turn right to 84°13'N, 79°13'W; then at 2000' MSL direct to 82°47'N, 81°23'W.

Short Look and Lay Down—After passing 32°47'N, 81°23'W aircraft shall maintain between 2000' MSL and 3000' MSL through the bomb run corridor (4 NM either side of center line from 32°47'N, 81°23'W to 32°21'N, 82°02'W). After exiting the route at 32°21'N, 82°02'W, aircraft shall climb to or maintain 3,000' MSL to 32°16'N, 82°09'W; climb to cross 32°15'N, 82°11'W at 4,000' MSL; cross 32°12'N, 82°15'W at 6,000' MSL; right turn, continue climb to cross 32°16'N, 82°30'W at 11,000' MSL; maintain 11,000' direct 32°42'N, 82°20'W; then climb so as to cross 33°02'N, 82°28'W at FL 180; cross 33°10'N, 82°27'30'W at FL 200; cross 33°22'N, 82°27'W at FL 230 or as assigned; then at FL 230 or as assigned direct to the Augusta, Ga., VOR.

Re-Entry—Aircraft that are scheduled to execute an

additional bomb run shall, after exiting the low level route at 32°21'N, 82°02'W, turn right and descend or maintain 2000' MSL to 32°22'N, 82°13'W; then at 2000' MSL continue turn to 32°30'N, 82°11'W; then at 2000' MSL direct to 33°04'N, 81°20'W; then at 2000' MSL turn right to 33°04'N, 81°10'W; continue turn to 32°55'N, 81°11'W; then at 2000' MSL direct to 32°47'N, 81°23'W; thence via the published route.



Alternate Entry—Aircraft shall cross the Dublin, Georgia VOR (32°31'N, 83°06'W) at FL 260 or as assigned; then descend direct via the Dublin VOR 028° radial so as to cross 32°47'N, 82°59'W at FL 230; cross 33°01'N, 82°51'W at 17,000' MSL; cross 33°09'N, 82°44'W at 15,000' MSL; turn right to cross 33°11'N, 82°28'W at 13,000' MSL; cross 32°54'N, 82°08'W at 3000' MSL; then descend direct so as to cross 32°48'N, 81°54'W at 2000' MSL; then at 2000' MSL direct to 33°04'N, 81°20'W; then at 2000' MSL turn right to 33°04'N, 81°10'W; continue turn to 32°55'N, 81°11'W; then at 2000' MSL direct to intercept the Walnut Grove route at 32°47'N, 81°23'W.

Route Width—The entire route width is reduced to 4 NM either side of centerline except, from 33°26'N, 80°25'W to 32°47'N, 81°23'W the route width is reduced to 6 NM.

Hours of Operation—Primary entry 1900Z to 2300Z and from 0100Z to 1400Z, 7 days per week; alternate entry 24 hours per day, 7 days per week.

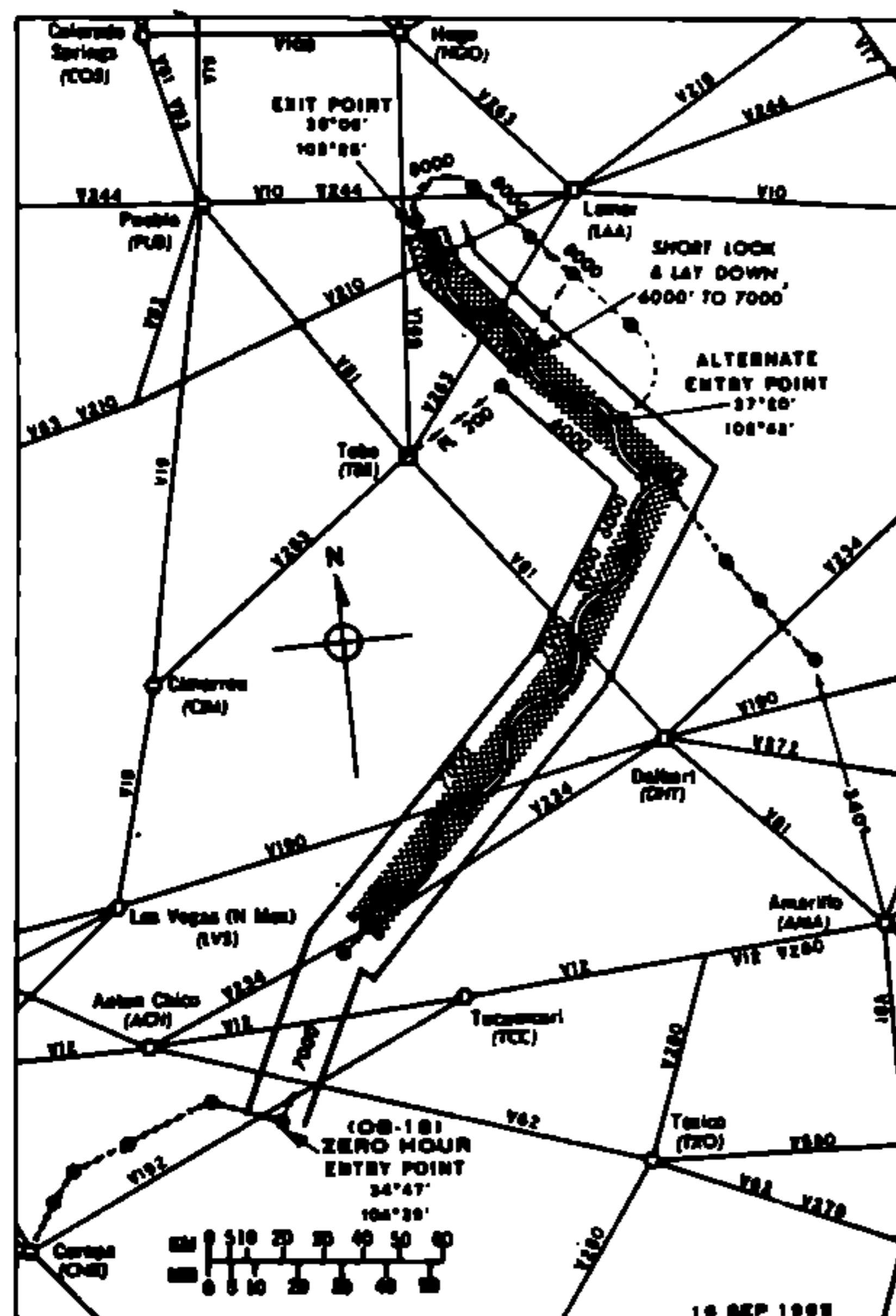
COLORADO/KANSAS/NEW MEXICO

OKLAHOMA/TEXAS

ZERO HOUR OB-18

Revised Effective July 8, 1965

Aircraft shall cross 34°22'N, 105°40'30"W (Corona, New Mexico VOR) (reporting point) at FL 250 or as



assigned by ATC, then descend direct to cross 34°33'N, 105°33'W at or below FL 230; then descend direct to cross 34°40'N, 105°28'W at FL 220; then descend direct to cross 34°45'N, 105°12'W at or below 17,000' MSL; then descend direct to cross 34°53'N, 104°48'W at 10,000' MSL; then descend direct to cross the route entry point at 34°47'N, 104°29'W at 7000' MSL, maintain 7000' MSL direct to 35°24'N, 104°08'W; then 7000' MSL direct to 36°22'N, 103°00'W; then 7000' MSL direct to 36°37'N, 102°49'W; then descend direct to cross 36°49'N, 102°40'W at 6000' MSL; then 6000' MSL direct to 37°06'N, 102°27'W; then 6000' MSL direct to 37°36'N, 103°00'W.

Short Look and Lay Down—After passing 37°36'N, 103°00'W, aircraft shall maintain between 6000' MSL and 7000' MSL thru the bomb run corridor (4 NM either side of centerline from 37°36'N, 103°00'W to 37°57'N, 103°22'W to 38°08'N, 103°25'W). After exiting the route at 38°08'N, 103°25'W climb direct to cross 38°09'N, 103°26'W at 8000' MSL, turn right, maintain 8000' MSL to 38°15'N, 103°10'W, then 8000' MSL direct to 38°02'N, 102°55'W, then climb direct to cross 37°53'N, 102°45'W at 9000' MSL, continue climb direct to cross 37°30'N, 103°06'W at FL 200; then maintain FL 200 direct to Tobe VORTAC.

Re-Entry—After completing the initial bomb run aircraft that are scheduled to execute an additional bomb run shall, after exiting the route at 38°08'N, 103°25'W, climb direct to cross 38°09'N, 103°26'W at 8000' MSL, maintain 8000' MSL right turn to 38°15'N, 103°10'W, then 8000' MSL direct to 37°40'N, 102°30'W; then turn right descending to cross 37°24'N, 102°47'W at 6000' MSL; thence via the published route.

VFR and Contour—If the encountered weather conditions along the route are equal to or better than ceiling 3,000', visibility 5 miles, the pilot may descend VFR and operate VFR between the IFR altitudes indicated on the chart and 800' above the immediate terrain between the following points: From 35°30'N, 104°01'W to 38°08'N, 103°25'W. VFR operations conducted during the hours of darkness will not be flown lower than 800' above the terrain.

Alternate Entry—Aircraft shall cross 36°19'N, 101°51'W (Amarillo VORTAC 340/82) at FL 230, or as assigned by ATC, then descend direct to cross 36°34'N, 102°03'W at 17,000' MSL; then descend direct to cross 36°44'N, 102°11'W at 14,000' MSL; then descend direct to cross 37°06'N, 102°27'W at 11,000' MSL; then descend direct to cross 37°20'N, 102°42'W at 6000' MSL; thence via the published route.

Route Width—The route width from 34°47'N, 104°29'W to 35°24'N, 104°08'W is reduced to 4 NM on the east side of centerline, and from 37°36'N, 103°00'W, to 38°06'N, 103°25'W, the route is reduced to 4 NM on the west side of centerline.

Hours of Operation—24 hours daily, 7 days per week.

STANDARD INSTRUMENT APPROACH PROCEDURES ACTIONS

The following Standard Instrument Approach Procedures will be revised, established, or cancelled effective November 6, 1965.

Location	Procedure	Action
AUTOMATIC DIRECTION FINDING		
Augusta, Ga.—Bush Fld	No. 1, Amdt. 13	Revised
Brookings, S.D.—Brookings Muni Arpt	No. 1, Orig.	Established
East St. Louis, Ill.—Bl-State Parks Arpt	No. 1, Orig.	Established
Everett, Wash.—Paine Fld	No. 1, Amdt. 4	Revised
Land O'Lakes, Wisc.—King's Land O'Lakes Muni Arpt ..	No. 1, Orig., efctv 14 Oct 65	Cancelled
Mt. Vernon, Ill.—Mt. Vernon Muni Arpt	No. 1, Orig.	Established
Reed City, Mich.—Miller Fld	No. 1, Orig.	Established
Toledo, Ohio—Toledo Express Arpt	No. 1, Amdt. 10	Revised
VHF OMNIRANGE		
Auburn, Ala.—Auburn-Opelika Arpt	No. 1, Amdt. 3	Revised
Barababoo, Wisc.—Bell Aero Service Arpt	No. 1, Orig.	Established
Bradford, Pa.—Bradford-McKean Co. Arpt	No. 2, Orig.	Established
Concord, Calif.—Buchanan Fld	No. 1, Orig.	Established
Crescent Beach, S.C.—Myrtle Beach Arpt	No. 1, Amdt. 6	Revised
Dowagiac, Mich.—Cass Co. Mem Arpt	No. 1, Orig.	Established
Framlington, N.M.—Farmington Muni Arpt	No. 2, Orig.	Established
Hibbing, Minn.—Chisholm-Hibbing Arpt	No. 1, Amdt. 3	Revised
Key West, Fla.—Key West Int'l Arpt	No. 1, Amdt. 9 efctv 19 Aug 65	Cancelled
Mansfield, Mass.—Mansfield Muni Arpt	No. 1, Orig.	Established
Napa, Calif.—Napa Co. Arpt	No. 1, Orig., efctv 23 Oct 65	Cancelled
Pottstown, Pa.—Pottstown Arpt	No. 1, Orig.	Established
Rockford, Ill.—Greater Rockford Arpt	No. 1, Amdt. 6	Revised
Tupelo, Miss.—Tupelo Muni Arpt	No. 1, Orig.	Established
TERMINAL VOR		
Cape Girardeau, Missouri—Cape Girardeau Muni Arpt ..	TerVOR-2, Orig.	Established
Cape Girardeau, Missouri—Cape Girardeau Muni Arpt ..	TerVOR-20, Orig.	Established
Everett, Wash.—Paine Fld	VOR-16, Amdt. 3	Revised
Hastings, Neb.—Hastings Muni Arpt	TerVOR-14, Amdt. 4	Revised
Hastings, Neb.—Hastings Muni Arpt	TerVOR-32, Amdt. 3	Revised
Santa Ana, Calif.—Orange Co. Arpt	VOR-1L, Amdt. 1	Revised
Tupelo, Miss.—Tupelo Muni Arpt	TerVOR-4, Orig., efctv 22 Aug 63	Cancelled
VOR/DME		
Charlotte, N.C.—Douglas Muni Arpt	VOR/DME #1, Amdt. 2	Revised
Franklin, Va.—John Beverly Rose Fld/Franklin Muni Arpt	VOR/DME #1, Orig.	Established
Key West, Fla.—Key West Int'l Arpt	VOR/DME #1, Orig.	Established
Rockford, Ill.—Greater Rockford Arpt	VOR/DME #1, Amdt. 4	Revised
INSTRUMENT LANDING SYSTEM		
Everett, Wash.—Paine Fld	ILS-16, Amdt. 6	Revised
RADAR		
Detroit, Mich.—Detroit City Arpt	No. 1, Amdt. 1	Revised

The following Standard Instrument Approach Procedures will be revised, established, or cancelled effective November 13, 1965.

Location	Procedure	Action
LOW FREQUENCY RANGE		
Skwentna, Alaska—Skwentna Arpt	No. 1, Orig.	Established
AUTOMATIC DIRECTION FINDING		
Aberdeen, Md.—Phillips AAF	No. 1, Amdt. 1	Revised
Buffalo, N.Y.—Greater Buffalo Int'l Arpt	No. 1, Amdt. 4	Revised
Buffalo, N.Y.—Greater Buffalo Int'l Arpt	No. 2, Orig.	Established
Buffalo, N.Y.—Greater Buffalo Int'l Arpt	No. 2, Amdt. 2, efctv 23 Jun 62	Cancelled
Buffalo, N.Y.—Greater Buffalo Int'l Arpt	No. 3, Amdt. 3 efctv 26 Oct 63	Cancelled
Cut Bank, Montana—Cut Bank Arpt	No. 1, Amdt. 1, efctv 21 Sept 63	Cancelled
Dillon, Montana—Dillon Arpt	No. 1, Amdt. 1, efctv 19 Dec 64	Cancelled
Fort Brag, N.C.—Simmons AAF	No. 1, Orig.	Established
Newark, N.J.—Newark Arpt	No. 2, Amdt. 5	Revised
Pierre, S.D.—Pierre Muni Arpt	No. 1, Amdt. 1, efctv 20 Feb 64	Cancelled
VHF OMNIRANGE		
Alexandria, La.—Esler Fld	No. 2, Amdt. 4	Revised
Cleveland, Ohio—Cleveland Hopkins Arpt	No. 1, Amdt. 6	Revised
Cut Bank, Mont.—Cut Bank Arpt	No. 1, Amdt. 5	Revised
Douglas, Ariz.—Bisbee-Douglas Int'l Arpt	No. 1, Amdt. 9, efctv 4 Apr 64	Cancelled
Eau Claire, Wisc.—Eau Claire Muni Arpt	No. 1, Amdt. 11	Revised
Kotzebue, Alaska—Ralph Wien Mem Arpt	No. 1, Orig.	Established
Kotzebue, Alaska—Ralph Wien Mem Arpt	No. 2, Orig.	Established
Midland, Tex.—Midland Air Terminal Arpt	No. 1, Amdt. 13	Revised
Picayune, Miss.—Picayune Muni Arpt	No. 1, Amdt. 4	Revised
Pierre, S.D.—Pierre Muni Arpt	No. 1, Amdt. 7	Revised
Trenton, N.J.—Mercer Co. Arpt	No. 1, Amdt. 4	Revised
Tucson, Ariz.—Tucson Int'l Arpt	No. 1, Amdt. 5	Revised
Tuscaloosa, Ala.—Van De Graaff Arpt	No. 1, Amdt. 11	Revised
Zanesville, Ohio—Municipal Arpt	No. 1, Amdt. 2, efctv 11 May 63	Cancelled
TERMINAL VOR		
Baltimore, Md.—Friendship Int'l Arpt	TerVOR-28, Amdt. 8	Revised
Dillon, Mont.—Dillon Arpt	TerVOR(R-007), Amdt. 3	Revised
Douglas, Ariz.—Bisbee-Douglas Int'l Arpt	VOR-R-319, Orig.	Established
Richmond, Va.—Richard E. Byrd Flying Fld	TerVOR-6, Amdt. 9	Revised
Richmond, Va.—Richard E. Byrd Flying Fld	TerVOR-24, Amdt. 6	Revised
Saginaw, Mich.—Tri-City Arpt	TerVOR-5, Amdt. 3	Revised
Shelbyville, Tenn.—Bomar Fld	TerVOR-38, Amdt. 1	Revised
Zanesville, Ohio—Zanesville Muni Arpt	TerVOR-4, Orig.	Established
VOR/DME		
Buffalo, N.Y.—Greater Buffalo Int'l Arpt	VOR/DME #1, Amdt. 7	Revised
Dothan, Ala.—Dothan Arpt	VOR/DME #1, Orig.	Established
Douglas, Ariz.—Bisbee-Douglas Int'l Arpt	VOR/DME #1, Orig.	Established
Midland, Tex.—Midland Air Terminal	VOR/DME #1, Orig.	Established
Midland, Tex.—Midland Air Terminal	VOR/DME #2, Orig.	Established
INSTRUMENT LANDING SYSTEM		
Binghamton, N.Y.—Broome Co. Arpt	ILS-34, Amdt. 9	Revised
Buffalo, N.Y.—Greater Buffalo Int'l Arpt	ILS-5, (Back Course), Amdt. 8	Revised
Buffalo, N.Y.—Greater Buffalo Int'l Arpt	ILS-5, Orig.	Established
Buffalo, N.Y.—Greater Buffalo Int'l Arpt	ILS-23, Amdt. 13	Revised

Location	Procedure	Action
INSTRUMENT LANDING SYSTEM		
Cleveland, Ohio—Cleveland Hopkins Arpt	ILS-27, Amdt. 5	Revised
Fayetteville, N.C.—Grannic Fld	ILS-3, Orig.	Established
Newark, N.J.—Newark Arpt	ILS-4, Amdt. 10	Revised
Newark, N.J.—Newark Arpt	ILS-22, Amdt. 10	Revised
Raleigh, N.C.—Raleigh-Durham Arpt	ILS-5, Amdt. 0	Revised

RADAR

Houston, Tex.—William P. Hobby Arpt	No. 1, Amdt. 14	Revised
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The following Standard Instrument Approach Procedures will be revised, established, or cancelled effective November 20, 1965:

LOW FREQUENCY RANGE

Anchorage, Alaska—Anchorage Int'l Arpt	No. 1, Amdt. 0	Revised
Anchorage, Alaska—Merrill Fld	No. 1, Amdt. 14	Revised

AUTOMATIC DIRECTION FINDING

Anchorage, Alaska—Anchorage Int'l Arpt	No. 1, Amdt. 17	Revised
Lancaster, Pa.—Lancaster Mun Arpt	No. 1, Amdt. 0	Revised
Manhattan, Kans.—Manhattan Mun Arpt	No. 1, Amdt. 2	Revised
Muskegon, Mich.—Muskegon Co Arpt	No. 1, Amdt. 3	Revised
Shenandoah, Iowa—Shenandoah Mun Arpt	No. 1, Orig.	Established
Waukegan, Ill.—Waukegan Mem Arpt	No. 1, Orig., efctv 20 Nov 65	Established

VHF OMNIRANGE

St. Clairsville, Ohio—Alderman Fld	No. 1, Amdt. 4	Revised
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TERMINAL VOR

Lancaster, Pa.—Lancaster Arpt	TerVOR-8, Amdt. 4	Revised
Lancaster, Pa.—Lancaster Arpt	TerVOR-31, Amdt. 4	Revised

VOR/DME

Grand Island, Neb.—Grand Island Mun Arpt	VOR/DME #1, Orig.	Established
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INSTRUMENT LANDING SYSTEM

Muskegon, Mich.—Muskegon Co Arpt	ILS-32, Amdt. 5	Revised
St. Louis, Mo.—Lambert-St. Louis Mun Arpt	ILS-6, (Back Course), Amdt. 10	Revised
St. Louis, Mo.—Lambert-St. Louis Mun Arpt	ILS-12R, Amdt. 1	Revised
St. Louis, Mo.—Lambert-St. Louis Mun Arpt	ILS-24, Amdt. 28	Revised
St. Louis, Mo.—Lambert-St. Louis Mun Arpt	ILS-30L, (Back Course), Amdt. 1	Revised

RADAR

Fort Belvoir, Va.—Davison U.S. Army Airfield	No. 1, Amdt. 2	Revised
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DATES OF LATEST EDITIONS

AIM-Nov. 11, 1965

Aeronautical Charts
U. S. Coast and Geodetic Survey

SECTIONAL

	Current Edition Date	Next Edition Date		Current Edition Date	Next Edition Date		Current Edition Date	Next Edition Date
Aberdeen	Aug 19 65	3/3/66	Fargo	Aug 19 65	3/3/66	→ Orlando	Nov 11 65	4/28/66
Albany	Jul 22 65	2/3/66	Glacier Park	Oct 14 65	10/13/66	Phoenix	Jul 22 65	1/6/66
Albuquerque	Aug 19 65	3/3/66	Grand Canyon	May 27 65	12/9/65	Pocatello	Oct 14 65	3/31/66
Aroostook	Apr 29 65	4/28/66	→ Grand Junction	Nov 11 65	5/26/66	Portland	Jul 22 65	2/3/66
→ Austin	Nov 11 65	4/28/66	Green Bay	May 27 65	12/9/65	Prescott	Sept 16 65	3/31/66
Beaumont	Sept 16 65	3/31/66	Huntington	Aug 19 65	2/3/66	Rapid City	Jun 24 65	12/9/65
Bellingham	May 27 65	12/9/65	→ Jacksonville	Nov 11 65	4/28/66	Reno	Jun 24 65	1/6/66
Birmingham	Oct 14 65	4/28/66	Kansas City	Aug 19 65	2/3/66	Roswell	Jun 24 65	1/6/66
Boise	May 27 65	5/26/66	Klamath Falls	Sept 16 65	3/31/66	Sacramento	Jun 24 65	1/6/66
Boston	Sept 16 65	3/3/66	Kootenai	Feb 4 65	2/3/66	Salina	Sept 16 65	3/31/66
→ Burlington	Nov 11 65	4/28/66	La Grande	Jul 22 65	2/3/66	Salt Lake City	May 27 65	12/9/65
Butte	Jul 22 65	2/3/66	Lake Huron	May 27 65	5/26/66	San Antonio	Jun 24 65	1/6/66
Casper	Oct 14 65	3/31/66	Lake Superior	Aug 19 65	3/3/66	San Diego	Aug 19 65	3/3/66
Charlotte	Oct 14 65	4/28/66	Lake of Woods	Aug 19 65	8/18/66	San Francisco	Jun 24 65	1/6/66
Chattanooga	Aug 19 65	2/3/66	→ Lewiston	Nov 11 65	4/28/66	Savannah	Sept 16 65	3/3/66
Cheyenne	Jun 24 65	12/9/65	Lincoln	Oct 14 65	3/13/66	Seattle	Jun 24 65	12/9/65
Chicago	May 27 65	12/9/65	Little Rock	Jul 22 65	1/6/66	Shreveport	Jun 24 65	1/6/66
Cincinnati	Aug 19 65	2/3/66	Los Angeles	Aug 19 65	3/3/66	→ Sioux City	Nov 11 65	5/26/66
→ Cleveland	Nov 11 65	5/26/66	Miami	Sept 16 65	3/31/66	Spokane	Jun 24 65	12/9/65
Corpus Christi	Jul 22 65	2/3/66	Miles City	Oct 14 65	4/28/66	Trinidad	Sept 16 65	3/3/66
Dallas	Jul 22 65	2/3/66	Milwaukee	May 27 65	12/9/65	Tulsa	Oct 14 65	4/28/66
→ Del Rio	Nov 11 65	11/10/66	Minot	Sept 16 65	3/3/66	→ Twin Cities	Nov 11 65	4/28/66
Denver	Jun 24 65	12/9/65	Mobile	Jul 22 65	2/3/66	Washington, D.C.	Oct 14 65	3/31/66
→ Des Moines	Nov 11 65	4/28/66	→ Mt. Shasta	Nov 11 65	5/26/66	Wichita	Jun 24 65	1/6/66
Detroit	Jul 22 65	1/6/66	Mt. Whitney	Jun 24 65	1/6/66	Williston	Jul 22 65	7/21/66
Douglas	Oct 14 65	10/13/66	Nashville	Jul 22 65	1/6/66	Winston-Salem	Oct 14 65	3/31/66
Dubuque	Sept 16 65	3/31/66	New Orleans	Sept 16 65	3/31/66	Yellowstone Park	Sept 16 65	3/3/66
Duluth	Jul 22 65	7/21/66	New York	Oct 14 65	3/31/66			
Elko	May 27 65	12/9/65	Norfolk	Sept 16 65	3/3/66			
El Paso	Aug 19 65	3/3/66	→ Oklahoma City	Nov 11 65	4/28/66			

LOCAL

Atlanta	Oct 14 65	4/28/66	Honolulu	Jan 7 65	1/6/66	Philadelphia	Oct 14 65	3/31/66
Boston	Sept 16 65	3/3/66	Indianapolis	Aug 19 65	2/3/66	Phoenix	Jul 22 65	1/6/66
Brownsville	Jul 22 65	2/3/66	→ Jacksonville	Nov 11 65	4/28/66	→ Pittsburgh	Nov 11 65	5/26/66
Chicago	May 27 65	12/9/65	Kansas City	Aug 19 65	2/3/66	St. Louis	Aug 19 65	2/3/66
→ Cleveland	Nov 11 65	5/26/66	Los Angeles	Aug 19 65	3/3/66	San Diego	Aug 19 65	3/3/66
Dallas-Ft. Worth	Jul 22 65	2/3/66	Miami	Sept 16 65	3/31/66	→ San Francisco	Oct 14 65	6/23/66
Dayton	Aug 19 65	2/3/66	Milwaukee	May 27 65	12/9/65	San Juan	Dec 10 64	12/9/65
Denver	Jun 24 65	12/9/65	Montgomery	Oct 14 65	4/28/66	Seattle	Jun 24 65	12/9/65
Detroit	Jul 22 65	1/6/66	New York	Oct 14 65	3/31/66	→ Washington	Oct 14 65	3/31/66
			Norfolk	Sept 16 65	3/3/66			

† DISCONTINUED

→ New Edition published. Obsoletes Earlier Edition on Nov. 11, 1965.

* New Edition will be published prior to Effective date.

WORLD AERONAUTICAL - UNITED STATES

WAC 62	Mar. 31, 1965	WAC 217	Aug. 28, 1964	WAC 360	Oct. 27, 1964
WAC 63	Mar. 30, 1965	WAC 218	Apr. 8, 1965	WAC 361	Oct. 27, 1964
WAC 64	Mar. 31, 1965	WAC 219	Apr. 2, 1965	WAC 362	Aug. 3, 1965
WAC 76	Oct. 26, 1964	WAC 262	May 11, 1965	WAC 363	Sept. 6, 1965
WAC 77	Oct. 2, 1964	WAC 263	Apr. 29, 1965	WAC 364	Jan. 21, 1965
WAC 78	Oct. 1, 1964	WAC 264	Apr. 12, 1965	* WAC 404	July 29, 1964
WAC 117	May 7, 1965	WAC 265	Sept. 25, 1964	WAC 405	Feb. 15, 1965
WAC 118	June 3, 1965	WAC 266	Oct. 2, 1964	* WAC 406	Aug. 12, 1964
WAC 119	June 28, 1965	WAC 267	Nov. 13, 1964	WAC 407	Mar. 8, 1965
WAC 135	June 28, 1965	WAC 268	Apr. 6, 1965	WAC 408	June 11, 1965
WAC 136	Sept. 8, 1965	WAC 269	Aug. 26, 1964	WAC 409	July 9, 1965
WAC 137	July 14, 1965	WAC 304	Jan. 21, 1965	WAC 410	June 8, 1965
WAC 138	Apr. 7, 1965	WAC 305	Sept. 4, 1964	WAC 466	May 27, 1965
WAC 139	Apr. 2, 1965	WAC 306	Oct. 5, 1964	WAC 467	June 15, 1965
WAC 186	Mar. 30, 1965	WAC 307	Oct. 7, 1964	WAC 468	Dec. 28, 1964
WAC 190	July 7, 1965	WAC 308	Nov. 16, 1964	WAC 469	Jan. 4, 1965
WAC 191	May 6, 1965	WAC 309	Nov. 24, 1964	WAC 470	Feb. 15, 1965
WAC 192	Mar. 31, 1965	WAC 310	Nov. 30, 1964	WAC 471	Mar. 22, 1965
WAC 193	Mar. 30, 1965	WAC 357	Apr. 30, 1965	WAC 522	Dec. 28, 1964
WAC 216	Jan. 22, 1965	WAC 358	May 19, 1965	WAC 525	May 18, 1965
WAC 216	Aug. 31, 1964	WAC 359	Oct. 28, 1964		

JET NAVIGATION

JN 29 United States Northwest	Apr. 12, 1965	JN 44 United States Southwest	Feb. 1, 1965
JN 30 United States Northeast	Mar. 8, 1965	JN 45 United States Southeast	Jan. 4, 1965

PLANNING

VFR/IFR	July 22, 1965
AERONAUTICAL CHART CATALOG	Oct. 1, 1965

AIRCRAFT POSITION

3071 North Atlantic	May 14, 1965
3073 Caribbean Sea	Feb. 1, 1965
3087 Central Pacific	Dec. 1, 1964
3094 North Pacific	Aug. 1, 1965
3096 United States-Honolulu	Dec. 21, 1964
3097 North America-Europe	June 11, 1965

† DISCONTINUED

→ New Edition published. Obsoletes Chart of Earlier date.

* New Edition will be published in about one month.

INSTRUMENT APPROACH PROCEDURE CHARTS

NEW CHARTS AND NEW EDITIONS

U.S. DEPARTMENT OF COMMERCE •• COAST AND GEODETIC SURVEY					
Chart No.	City or Town	VOR	ADF	ILS	RNG
ALABAMA					
5127	Auburn (Auburn - Opelika)	11-6-65			
897	Gadsden	10-30-65R6			
633	Huntsville (Madison Co)	10-30-65(1)	10-30-65(1)	10-30-65R18 10-30-65R36(BC)	
277	Muscle Shoals	10-15-65(1)			
ALASKA					
1522	Anchorage (Merrill Fld.)				10-15-65
1233	Aniak				10-16-65
1188	Annette Island (FAA)	10-15-65R12 10-15-65R30	10-15-65(1) 10-15-65(2)	10-15-65R12	
1220	Gulkana				10-15-65
1225	McGrath	10-22-65(1)			10-22-65
1231	Nome (FAA)	10-16-65(1)			10-16-65
ARKANSAS					
728	Fayetteville (Drake Fld.)	10-15-65(1) 10-15-65(2)			
233	Little Rock (Adams Fld)		10-30-65(1)	10-30-65R4	
5002	Rogers	10-22-65(1)	10-22-65(1)		
420	Texarkana (Mun.)	10-15-65(1)			
CALIFORNIA					
36	Bakersfield (Meadows Fld)	10-30-65(1)		10-30-65R12L(BC)	
5320	Concord (Buchanan Fld.)	11-6-65(1)*			
5218	La Verne (Brackett Fld)	10-16-65Rad-163*			
236	Long Beach (Daugherty Fld)		10-16-65(1)	10-16-65R30	
237	Los Angeles (Intl)	10-16-65R7R 10-16-65R25L 10-16-65R7L 10-16-65R25R 10-16-65DME(1) 10-16-65(DME(2)	10-16-65(1) 10-16-65(2)	10-16-65R25L 10-16-65R7R&L(BC) 10-16-65R25R	
552	Los Angeles (Van Nuys)		10-22-65(1)	10-22-65-08	
294	Oakland (Metro. Intl)	10-23-65Rad-114 10-23-65DME(1) 10-23-65DME(2)	10-23-65(1)	10-23-65R29 10-23-65R11(BC) 10-23-65R27R 10-16-65R7(BC)* 10-22-65R25	
965	Ontario (Intl)		10-22-65(1)		
310	Palmdale (AF Plant No. 42)	10-15-65R22 10-15-65DME(1)			
858	Paso Robles (County)	10-16-65Rad-130 10-16-65DME(1)*			
688	Redding	10-15-65R34			
769	Riverside (Mun.)	10-16-65R9 10-16-65Rad-088*			
5237	San Bernardino (Tri-City)		10-16-65(1)		
373	San Diego (Lindbergh Fld)		10-23-65(1)	10-23-65R9	
693	San Jose	10-22-65R12R 10-22-65R30L		10-22-65R12R(BC) 10-22-65R30L	
377	Santa Ana (Orange Co.)	10-16-65R1L* 10-16-65R19R			

INSTRUMENT APPROACH PROCEDURE CHARTS

NEW CHARTS AND NEW EDITIONS

U.S. DEPARTMENT OF COMMERCE • COAST AND GEODETIC SURVEY					
Chart No.	City or Town	VOR	ADF	ILS	RNG
COLORADO					
114	Denver(Stapleton Intl)	10-29-65(1)	10-29-65(1) 10-29-65(2)	10-29-65R26L 10-29-65R35 10-29-65R38(BC) 10-29-65R17(BC)	
CONNECTICUT					
5272	Danbury	10-30-65(1)			
FLORIDA					
744	Fort Lauderdale(Hollywood Intl)	10-15-65R27 10-15-65R9 10-15-65R13	10-15-65(1)		
208	Jacksonville (Craig)	10-30-65DME(1)			
806	Key West (Intl)	11-6-65DME(1)*	11-6-65(1)		
305	Orlando (Hamdon)	10-15-65DME(1) 10-15-65DME(2)		10-15-65R25(BC)	
418	Pensacola		10-22-65(1) 10-22-65(2)	10-22-65R16 10-22-65R34(BC)	
640	Sarasota (Bradenton)	10-15-65R13			
GEORGIA					
469	Atlanta(DeKalb-Peachtree)	10-22-65(1)			
27	Augusta (Bush Field)	11-6-65(1)	11-6-65(1) 11-6-65(2)	11-6-65R35	
IDAHO					
68	Burley	10-16-65(1)	10-16-65(1)*		
ILLINOIS					
5091	Carbondale (Southern Ill.)		10-14-65(1)		
5028	Chicago (Pal-Waukee)	10-29-65(1)			
5214	Galesburg	10-22-65R2* 10-22-65R20* 10-14-65R2* 10-14-65R20*			
5215	Marion(Williamson Co.)				
5317	Mount Vernon		11-6-65(1)*		
954	Rockford(Greater)	11-6-65(1) 11-6-65DME(1)		11-6-65R18(BC)	
IOWA					
5314	Atlantic		10-16-65(1)*		
117	Des Moines		10-16-65(1)	10-16-65R30	
KANSAS					
212	Kansas City (Fairfax)		10-16-65(1)	10-16-65	
5241	Manhattan	10-16-65R3* 10-16-65R31*			
KENTUCKY					
5099	Ashland (Boyd Co.)		10-30-65(1)		
655	Covington(Grtr. Cincinnati)		10-22-65(1) 10-22-65(2)	10-22-65R36 10-22-65R18 10-22-65R18(BC) 10-22-65R36(BC)	

INSTRUMENT APPROACH PROCEDURE CHARTS

NEW CHARTS AND NEW EDITIONS

U.S. DEPARTMENT OF COMMERCE • COAST AND GEODETIC SURVEY					
Chart No.	City or Town	VOR	ADF	ILS	RNG
LOUISIANA					
5021	Alexandria (Eler Fld.)	10-30-65(1) 10-30-65(2)			
MAINE					
261	Millinocket	10-30-65(1)	10-30-65(1)		
MARYLAND					
5263	Cumberland		10-22-65(1)		
MASSACHUSETTS					
747	Fitchburg	10-23-65DME(1)	10-23-65(1)		
654	Lawrence	10-15-65R23	10-15-65(1)		
5322	Mansfield	11-6-65(1)*			
MICHIGAN					
5321	Dowagiac (Cass Co. Mem)	11-6-65(1)*			
5123	Esconaba	10-15-65R9			
781	Marquette (County)	10-15-65R8 10-15-65R26			
5202	Minneapolis (Anoka Co.- Janes)	10-22-65(1) 10-22-65DME(1)			
5298	Park Rapids	10-23-65R31			
5318	Reed City (Miller Fld.)		11-6-65(1)*		
5041	Rochester (Mun.)	10-23-65(1) 10-23-65DME(1) 10-23-65DME(2)	10-23-65(1)	10-23-65R31 10-23-65R13(BC)	
5190	South St. Paul (Fleming)	10-22-65(1) 10-22-65(2)			
MINNESOTA					
5159	Hibbing (Chisholm)	11-6-65(1) 11-6-65(2)			
MISSISSIPPI					
854	Tupelo	11-6-65(1)*			
MISSOURI					
943	Cape Girardeau	11-6-65R2* 11-6-65R20*			
213	Kansas City		10-16-65(1)	10-16-65R18	
780	Kansas City (Mid Continent Intl)		10-30-65(1)	10-30-65R36 10-30-65R18(BC)	
MONTANA					
48	Billings (Logan)	10-29-65(1) 10-29-65DME(1) 10-29-65DME(2)	10-29-65(1) 10-29-65(2)	10-29-65R9	
217	Kirkville (Clarence Cannon Mem.)	10-15-65(1)			
266	Missoula (County)	10-15-65(1) 10-15-65DME(1)	10-15-65(1)		

INSTRUMENT APPROACH PROCEDURE CHARTS

NEW CHARTS AND NEW EDITIONS

U.S. DEPARTMENT OF COMMERCE • COAST AND GEODETIC SURVEY

Chart No.	City or Town	VOR	ADF	ILS	RNG
NEBRASKA					
5217	Hastings (Mun.)	11-6-65R14 11-6-65R32	11-6-65(1)		
541	Keamey	10-22-65R18			
232	Lincoln (Mun Airt/AFB)	10-30-65(1)		10-30-65R17R(BC)	
292	North Platte (Lee Bird Field)	10-14-65(1)	10-14-65(1)		
NEVADA					
662	Las Vegas (McCarran Fld.)	10-8-65Rcd-166 10-8-65DME(1) 10-8-65DME(3) 10-29-65R25 10-29-65DME(4)	10-8-65(1)		
NEW JERSEY					
5026	Andover (Aeroflex-Andover)	10-22-65(1)			
5074	Vineland (Downtown)	10-15-65R2			
5253	Vineland (Rudy's)	10-22-65(1)			
NEW MEXICO					
493	Farmington	11-6-65(1) 11-6-65(2)*			
NEW YORK					
733	Calverton (Peconic River)	10-15-65(1)		10-15-65R5	
NORTH CAROLINA					
78	Charlotte (Douglas)	11-6-65DME(1) 11-6-65DME(2) 11-6-65DME(3) 11-6-65DME(4)			
NORTH DAKOTA					
5187	Grand Forks (Intl)	10-14-65R17* 10-14-65R35*			
OHIO					
94	Columbus (Mun.)		10-30-65(1)	10-30-65R28L	
184	Toledo (Express)		11-6-65(1)	11-6-65R7	
OKLAHOMA					
163	Gage	10-30-65(1)			
301	Oklahoma City (Will Rogers World)	10-30-65(1) 10-30-65DME(1)	10-30-65(1) 10-30-65(2)	10-30-65R35L 10-30-65R17R(BC)	
OREGON					
251	Medford	10-30-65(1) 10-30-65DME(1) 10-30-65DME(2)*			

INSTRUMENT APPROACH PROCEDURE CHARTS

NEW CHARTS AND NEW EDITIONS

U.S. DEPARTMENT OF COMMERCE • COAST AND GEODETIC SURVEY					
Chart No.	City or Town	VOR	ADF	ILS	RNG
OREGON					
530	The Dalles	10-16-65DME(1)			
649	Troutdale (Portland-Troutdale)		10-16-65(1)		
361	Salem (McNary Fld.)		10-16-65(1)	10-16-65R31	
PENNSYLVANIA					
926	Bradford (McKean County)	11-6-65(2)*			
5035	Dubois (Jefferson Co.)		10-22-65(1)		
139	Erie (Port Erie)	10-8-65(1)	10-8-65(1)	10-8-65R6	
			10-8-65(2)		
898	Johnstown (Cambria Co.)	10-22-65R5 10-22-65DME(3) 10-22-65DME(1) 10-22-65DME(2)			
5323	Pottstown	11-6-65(1)*			
RHODE ISLAND					
333	Providence (Green)		10-15-65(1)	10-15-65R5R	
SOUTH CAROLINA					
5097	Crescent Beach (Myrtle Beach)	11-6-65(1)			
401	Spartanburg (Downtown)	10-15-65(1) 10-15-65DME-R35	10-15-65(2)		
SOUTH DAKOTA					
969	Brookings		11-6-65(1)*		
TEXAS					
5189	Arlington	10-22-65(1)			
928	College Station (Eastwood Fld.)	10-15-65(1)			
198	Houston (Wm. P. Hobby)	10-8-65DME(1) 10-8-65DME(4) 10-8-65DME(2) 10-8-65DME(3)	10-8-65(1) 10-8-65(2) 10-8-65(3) 10-8-65(4)	10-8-65R3 10-8-65R21 (BC)	
5269	Laredo	10-16-65(1) 10-16-65DME(1)*			
369	San Antonio (Intl)	10-30-65(2)	10-30-65(2)		
5199	Sherman	10-22-65(1)			
439	Waco	10-15-65(1)	10-15-65(1)		
UTAH					
297	Ogden	10-22-65(1) 10-22-65DME(1)			
365	Salt Lake City (Mun. No. 1)	10-23-65(1) 10-23-65DME(1) 10-23-65DME(2) 10-23-65DME(3)	10-23-65(1)	10-23-65R34L 10-23-65R16R (BC)	
VERMONT					
522	Barre-Montpelier	10-30-65R35			
70	Burlington	10-22-65(1)	10-23-65(1)	10-23-65R15	

*NEW CHART

INSTRUMENT APPROACH PROCEDURE CHARTS

NEW CHARTS AND NEW EDITIONS

U.S. DEPARTMENT OF COMMERCE •• COAST AND GEODETIC SURVEY					
Chart No.	City or Town	VOR	ADF	ILS	RNG
VIRGINIA					
5025	Franklin(Rose Fld-Franklin)	11-6-65(1) 11-6-65DME(1)*			
499	Lynchburg(Preston Glenn Field)		10-16-65(1)	10-16-65R3	
WASHINGTON					
413	Fort Lewis (Gray AAF)		10-29-65(1)		
582	Seattle (Tacoma Intl)		10-30-65(2)	10-30-65R16	
641	Wenatchee (Pangborn Fld)	10-16-65(1)			
WISCONSIN					
5319	Baraboo (Bell Aero Service)	11-6-65(1)*			
5231	Fond Du Lac (County)		10-22-65(1)		
5077	Milwaukee (Lawrence J. Timmerman)	10-16-65R4L* 10-16-65R15L			
5085	Rhineland (Oneldo Co.)	10-22-65R5			
5078	Waukesha (County)	10-22-65R15 10-15-65(1)			
PUERTO RICO					
784	San Juan(Puerto Rico Intl)	10-16-65(1) 10-16-65R7 10-16-65R25	10-16-65(1)		
VIRGIN ISLANDS					
5008	Christiansted, St. Croix, (Alexander Hamilton)	10-16-65(1)			
RADAR					
Radar		Pages 1-18	10-29-65		

*NEW CHART

